

MAY

1925 ~ N° 232

Monthly

Distributed Free to Machine Tool
Users Everywhere in the United States and to
Dealers in American Machinery Abroad

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A.H. HITCHCOCK
1220-1235 Carlton Building
Chicago

FOR INDEXES SEE LAST PAGES



8 things about the feet on Type AA Reliance Motors

They are—thick.

- solid.
- cast integral with the end flanges.
- ribbed for extra strength.
- cast steel.
- planed accurately.
- jig drilled and seats for bolt heads
are spot faced.

Bulletin 5018 gives all the details

Reliance Electric & Engineering Co.

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Branches:

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NEW YORK

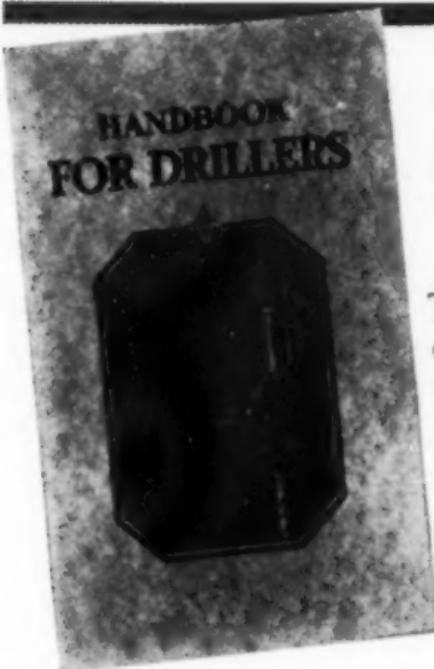
PHILADELPHIA
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BIRMINGHAM, ALA.

*We specialize in motors, sizes 1/2 to 200 h. p. constant and adjustable speed
D. C.; squirrel cage and slip ring A. C.*

Type **A.A. RELIANCE**
Induction Motors



The A-B-C of Good Drilling Practice!

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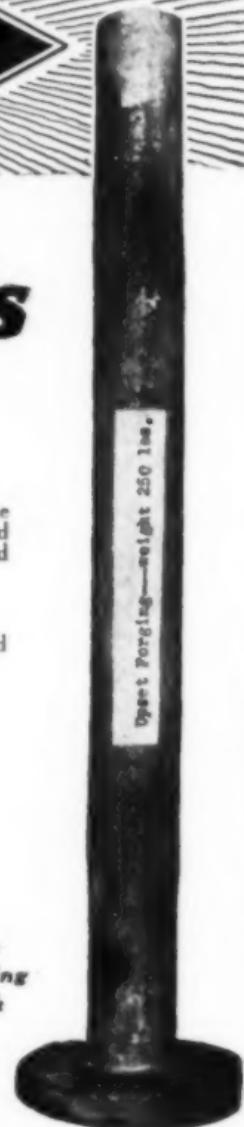
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1. **By Reducing Weights.** As an example the 250 lb flanged shaft here illustrated replaced a 316 lb. hammered shaft. Customer saved 66,000 lbs. of steel on 1000 shafts.
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OPERATOR: 1. Inserts blank, simultaneously engaging power feed.
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This is a machine for short run jobs where production counts

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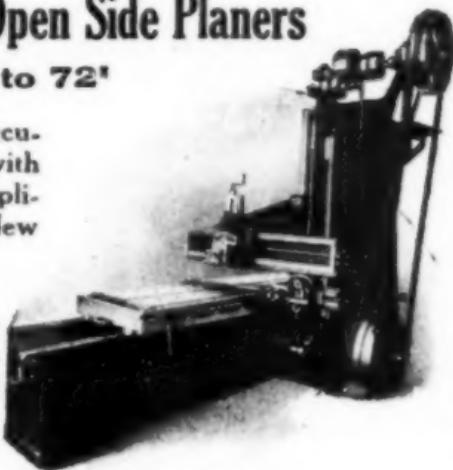
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Rigidity and Accuracy combined with remarkable Simplicity and all New Features.

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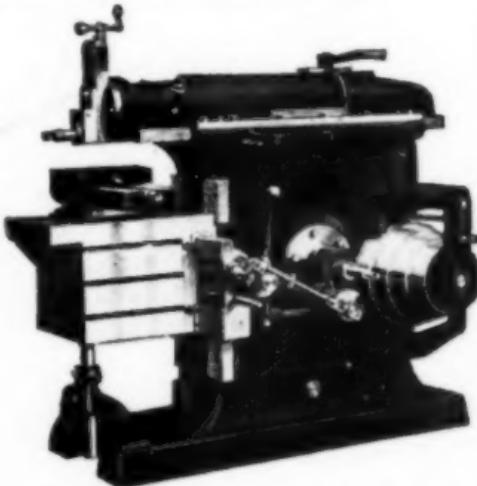
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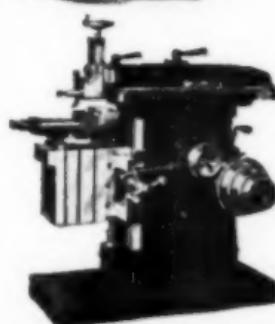
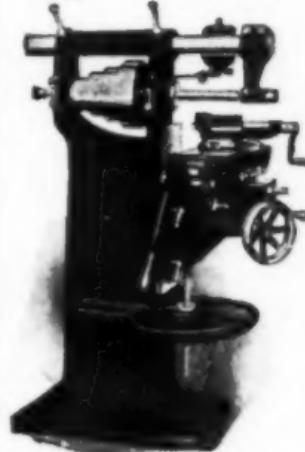
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14¹/₂ x 6' - \$450.00

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Gear Box
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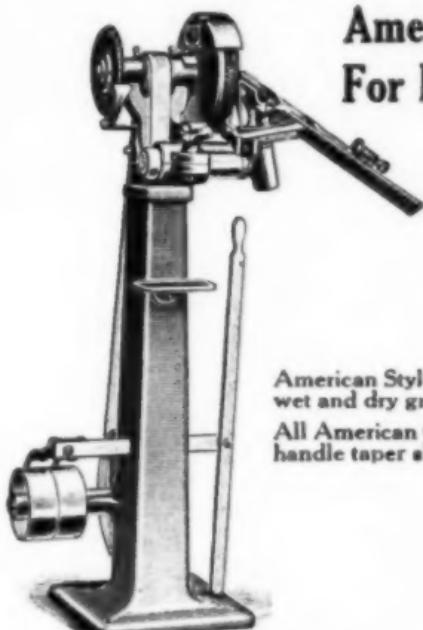
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American Style C T A
For Dry Grinding Only



Unexcelled as a dry grinder for twist drills. Extra large drill holder has capacity from 1" to 3½".

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All American Grinders are now equipped to handle taper shank drills.



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Grinding wheels.....	8" x 1"
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Height to spindle center.....	40"
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Has vertical travel of 12" on guides, ¾" by micrometer, and may be raised to within 2" of spindle center. Wheel grinds to center of a surface 9" wide.

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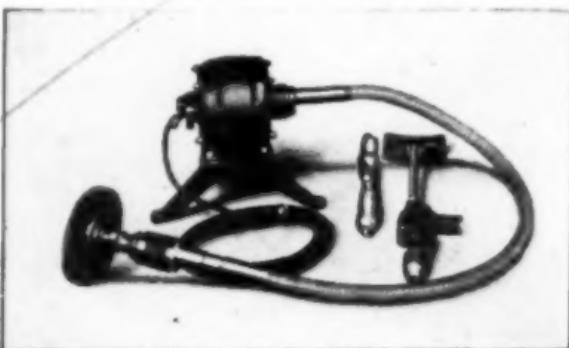
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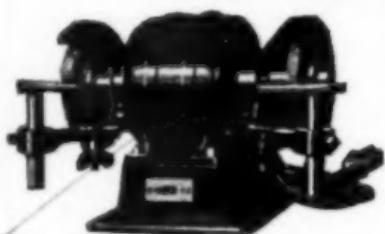
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3½ in.
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TRY to Match its Value!

The "Artisan" Lathe, complete with standard equipment costs \$170.00 f.o.b. factory

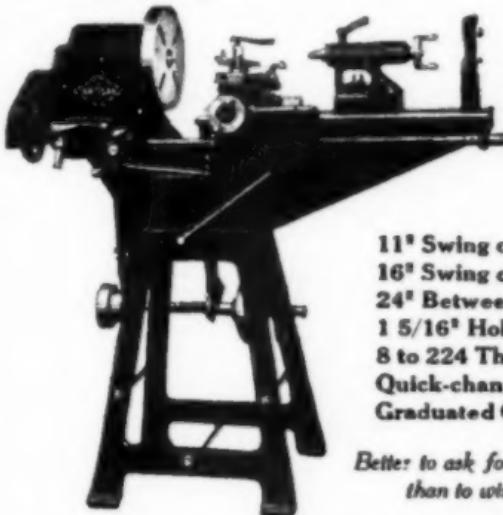
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Further:

That this Lathe will handle a greater range of work and take a heavier cut than any standard 11"x36" engine lathe.

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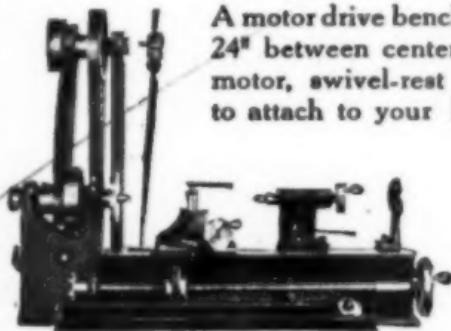
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Made in Sizes from 10-in. to 20-in.



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JUST-RITE
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Hardinge Standardized
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Also Collets for Bench Type Milling Machines and for Screw Machines. Prompt shipment from stock. Write for Price List and keep it for reference. And what do you need now?

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Builders of Portable Cylinder Boring Bars, Crank Pin Turners, Portable Millers, Pipe Benders, etc.



\$765

15"x6"
Geared
Head
Lathe,
Single
Friction
Pulley
Drive,
without
Motor.

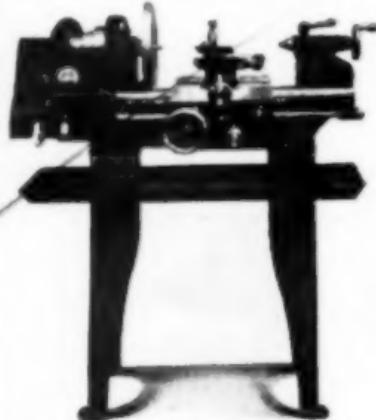
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The Sebastian Lathe Company
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Monarch Jr. Lathes



are the smallest members of the Monarch lathe family. Yet they are the "biggest little lathes" built.

The Monarch line of lathes includes all sizes and types from the little 9-inch Junior lathe to the big, massive 30-in. lathe. In this line there is a lathe to fill your requirements at the price you want to pay.

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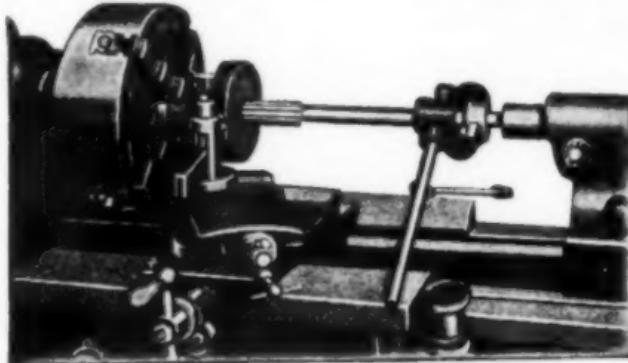


**If you ever ran a lathe it has surely happened to you.
It continues to happen daily in almost all shops.**

Until the Nicholson Reamer Holder was invented there was no other method by which a mechanic could keep his reamer from jumping in, or prevent it from reaming a tapered hole. This Holder can also be used instead of a chuck for drills and as a hold back in a lathe. It has many uses and saves double its cost in a short time. No. 1 size takes straight shank reamers and drills up to 1^{1/2} dia., and No. 2 takes up to 2^{1/2} in dia.

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Kind of thread on lead screw

Square Acme V

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Number of threads...

Give distance from top of
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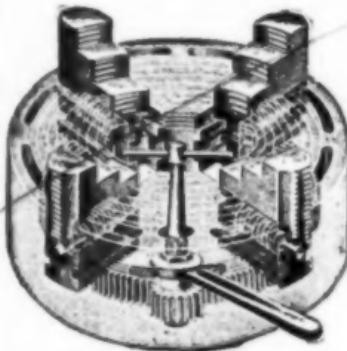
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For all sizes lathes. Saves backing belt. 20 Wolfe Street, Yonkers, N. Y.

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Over 100 shapes and sizes for every operation on Lathe, Planer, Shaper, Slotter, etc. — the only complete line. Better have our Tool Holder Catalog.

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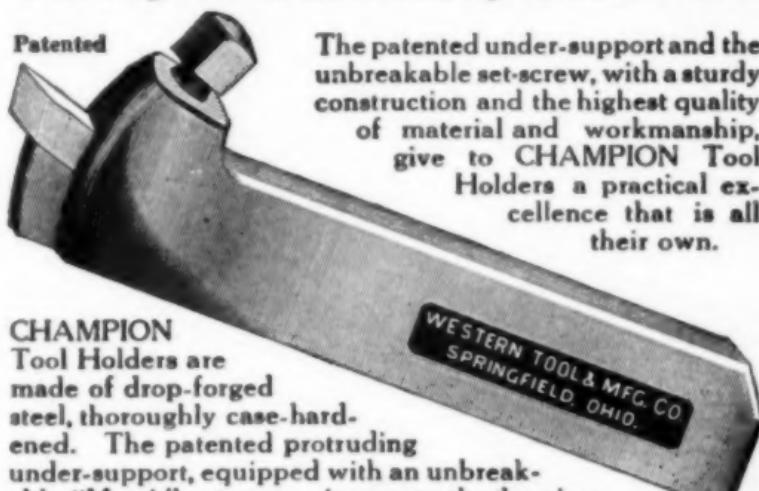
The Carroll & Jamieson Machine Tool Co.

Batavia, Ohio

Champion Tool Holders

Turning Tools — Boring Tools — Planer Tools
Cutting-Off Tools—Threading Tools
Grooving Tools and the Champion Drill Holder

Patented



The patented under-support and the unbreakable set-screw, with a sturdy construction and the highest quality of material and workmanship, give to CHAMPION Tool Holders a practical excellence that is all their own.

CHAMPION

Tool Holders are made of drop-forged steel, thoroughly case-hardened. The patented protruding under-support, equipped with an unbreakable "Mac-it" set-screw, increases the bearing for the cutter 40 to 70 per cent, with a corresponding increase in cutter economy. It also absorbs the heat from the cutter and permits heavier cuts, with less breakage.

Patented

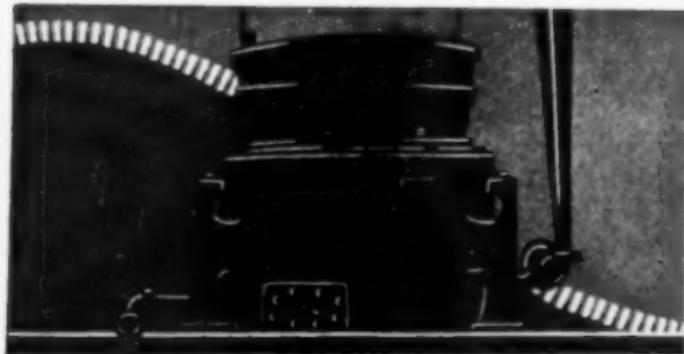


Champion Boring Tool

This tool is indispensable for inside threading and boring. Takes any length of cutter, which may be used down to short lengths. Cutters, drills, reamers, taps and many other tools can be used in this Holder.

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Springfield, Ohio



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6 to 15 gallons per load—
three or four loads per
hour. Write for catalog.

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Troy, N. Y.



Style "WC"



Style "O"



The Hinge



Style "G"



Style "A"

GITS Gravity and Wire Wick Feed Oilers

Gravity Feed—flushes
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Wire Wick Feed—gives
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Wire Wick—replaces
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Made in Standard sizes.



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Showing 255 full size
illustrations with detail
dimensions.



Style "U"

GITS OIL CUPS

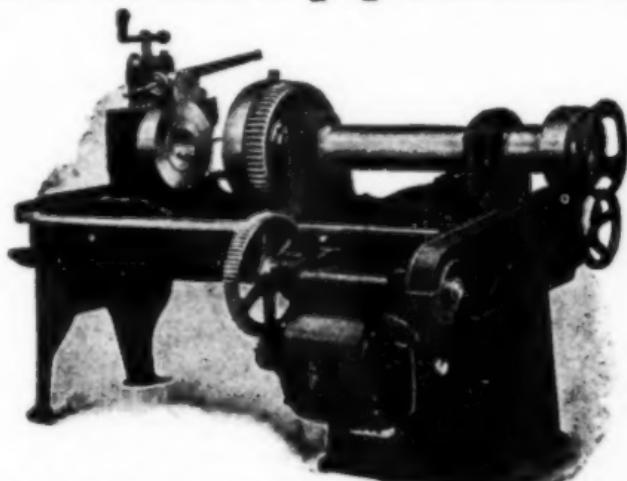
Oil cups for every lubricating
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GITS BROS. MFG. CO
1940 SO. KILBOURN AVE., CHICAGO



Style "T"

Speed—plus accuracy guarantees lowest costs with B. & K. pipe machines



No. 3 Peerless Improved. Motor Drive. Cap. $\frac{1}{4}$ " to 3".

JUST ONE GOOD FEATURE doesn't make a good pipe-threading machine—there must be a number of them, and you'll find plenty in B. & K.s. We've been building them for over 40 years, and you will be agreeably surprised at both quantity and quality of output.

THE MANY GOOD FEATURES embodied in B. & K.s. assure you of rock-bottom costs at all times because they save labor, time, and money. Equally good for odd jobs or big runs. The 17 styles and sizes thread and cut pipe from $\frac{1}{4}$ to 18 inches in diameter. Writing us about your needs incurs no obligation whatever.

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Steel Spacing Washers—

Made of a good grade of Cold Rolled Strip Steel, also known as Shim Steel



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Stock thicknesses: .002, .003, .004, .005, .006, .007, .008, .010, .012, .015, .020, .025, .032, .047, .063, .093 and .125 inch.

Other thicknesses up to 3.000⁸ made to order, with keyways if so ordered.

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Save Time Setting Gang Milling Cutters

Eliminate
Thin
Washers

Hardened
and
Ground



"Wear-Ever" Adjustable Spacing Collars permit setting cutters to the thousandth part of an inch without removing from the arbor.

Stock sizes for $\frac{3}{4}$ " to $2\frac{1}{2}$ " arbors, sent on approval. They are adjustable in 12 steps of $2/1000$ inches.

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Many New Tools



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Seven sizes cover work from $\frac{1}{8}$ " to 2". The Genesee is now made in six different styles, from the heavy roughing Style "B" to the accurate finishing Style "F." We also make Style "N" Mills for all Brown & Sharpe Automatics. Write us about your needs—our tools reduce costs.

Genesee Manufacturing Co., Inc.

Established 1908

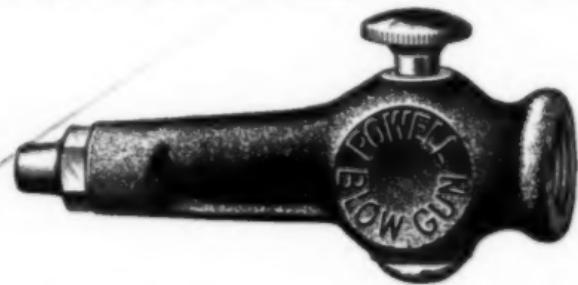
Rochester, N. Y., U. S. A.

Manufacturers of Genesee Rapid Production Tools

POWELL BLOW GUN

Designed to dispense air with utmost economy.

Used for cleaning machines, machine tools and work benches.



Made with different tips for special requirements.

Circular on request.

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A Big CANTON Carries Three Tons



The "CanTon" Portable Crane, Hoist and Truck makes it easy for one man to handle machinery and castings which ordinarily require the combined efforts of 6 to 10 men. 'Nuff sed.

The big size and also the smaller huskies pay for themselves in a comparatively short time. Just drop us a line and

Ask for Booklet E-8

CANTON FOUNDRY & MCHE. CO., Canton, Ohio

New York Office: 203 East 15th Street, Second Floor

FORD TRIBLOC



"Safety First" Hoists

By resisting the surge and shock of hoisting service in the shop—the strength, safety and smooth action of Ford Triblocs are saving man power and labor hours, and speeding human effort.

Workmen appreciate the advantages of Ford Triblocs—management profits through their use.

Capacities $\frac{1}{4}$ to 20 tons

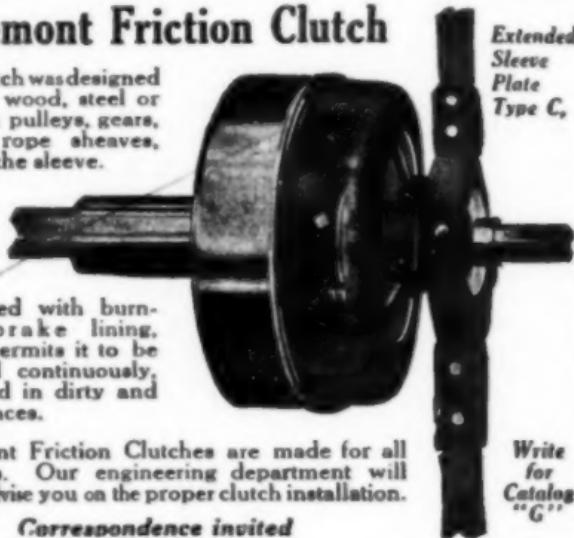
Write for Catalog 6-B

FORD CHAIN BLOCK COMPANY
2nd & Diamond Sts., Philadelphia, Pa.

2288-D

Edgemont Friction Clutch

This clutch was designed to drive wood, steel or cast iron pulleys, gears, drums, rope sheaves, etc., on the sleeve.



It is lined with burn-proof brake lining, which permits it to be operated continuously, and used in dirty and dusty places.

Edgemont Friction Clutches are made for all purposes. Our engineering department will gladly advise you on the proper clutch installation.

Correspondence invited

*Extended
Sleeve
Plate
Type C,*

*Write
for
Catalog
"G"*

**Edgemont Machine Co., Inc., DAYTON,
OHIO**

Barker Wrenchless Chuck

Developed and Manufactured by Thomas Elevator Co.

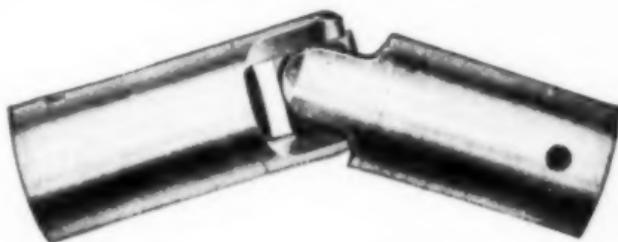
A complete Chucking Unit in Itself. The Barker Wrenchless Chuck requires No Accessory Installations.



Made in two- and three-jaw styles, for every kind of turret lathe, automatic, and semi-automatic machine work.

Thomas Elevator Co.
Chuck Division
31 So. Hoyne Ave., Chicago

NATCO Universal Joints



Of Proven Service

Made from Alloy Steel.

All working surfaces hardened and ground to insure maximum life.

Interchangeable manufacture permits repair parts replacement to overcome natural wear. Complete replacement is seldom necessary.

Manufactured in the following sizes—
 $\frac{5}{8}$ ", $\frac{3}{4}$ ", 1", $1\frac{1}{4}$ ", $1\frac{1}{2}$ ", 2", $2\frac{1}{2}$ ", 3".

*Descriptive Bulletin will be
sent on request.*

**The National Automatic Tool Co.
Richmond, Indiana**

Our Hollow Bored Forgings And Steel Shafts

Are RIGHT in both QUALITY and PRICE



Piston Rods

Rams

Clutch Shafts

Steel Pipes

Lathe Spindles

Etc., Etc.

Send along your blueprints with a trial order; we'll both be pleased

**American Hollow Boring Co.
Erie, Penna.**

Vanderbeek Universal Joints



—represent the practical refinements of 25 years experience in manufacturing Universal Joints. All parts are generous sized, fully protected against dirt, and are practically self-oiling. Exceptionally strong, they transmit full power up to 70°.

Vanderbeek Joints are in daily use on thousands of machines.

Write today for our Descriptive Catalog.

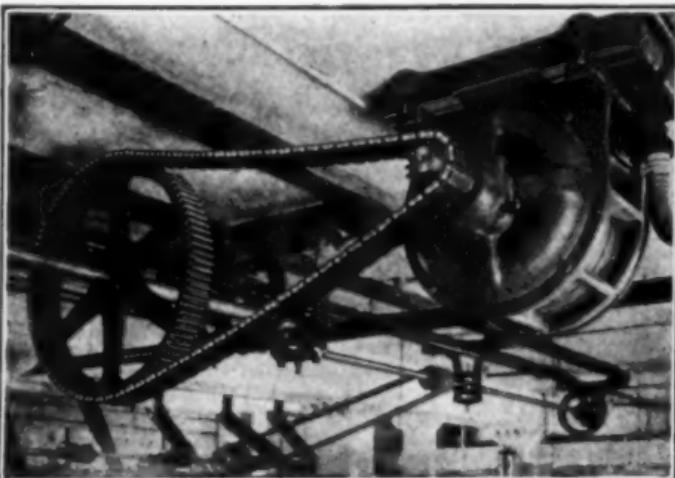
American Tool Works, Inc.

Hartford, Conn., U. S. A.



"WHITNEY"

Silent Chain Drives



A "WHITNEY SILENT CHAIN DRIVE"
can profitably be used on your line shafts.

There is no slippage, no loss of power,
and no high maintenance costs.

Let us fit the drive to the job

THE WHITNEY MFG. CO., - HARTFORD, CONN.

NEW YORK

L. C. Biglow & Co., Inc.
243 W. 55th St.

PITTSBURGH

Pittsburgh Gear & Mch. Co.
27th & Smallman Sts.

CLEVELAND

Smith Power Transmission Co.
1218 Ontario St.

SEATTLE, A. H. Coates Co., 1115 East Union St.

BOSTON

George C. Steil
727-A Boylston St.

SYRACUSE, N. Y.

George McPherson
201 Norwood Ave.

CHICAGO

E. H. Huntington
215 Machinery Hall

PHILADELPHIA

R. J. Howison
624 Race St.

DETROIT

A. G. Brice
240 Gen. Motors Bldg.

SAN FRANCISCO

A. H. Coates Co.
615 Howard St.

Compact—Sensitive—Accurate—Durable
The "ATLAS JUNIOR" INDICATOR

Reads over a range of 0.055"—at a glance. Dial may be set at zero after adjusting to work. Contact point can be locked in position for inspecting. Keep it in your pocket and use it anywhere. Details?

PRICE \$7.50



Sold by Dealers or Direct

WALLACE BROS.
160 N. Wells St., Dept. B.B. CHICAGO, ILL.

Model "25"

In a
Leather Case
with
Universal
Attachments

**Only
\$10.**



On a Surface Gauge

FEDERAL
Dial Indicator

Adjusts instantly to any desired position on a surface or height gauge; also for checking lathe, miller, grinder, shaper or planer work.

Send for our complete catalog of Dial Indicators, Cylinder Gauges, Comparators, Thickness Gauges, Piston Gauges, Rubber Gauges, Piston Pin Gauges, Fabric Gauges, Paper Gauges, Wire Gauges, Piston Ring Gauges, Thread Lead Gauges.

Federal Products Corporation
Elbow & Chestnut Sts., Providence, R. I.



How the Cincinnati Gear Co. use their
ROCKWELL HARDNESS TESTERS

Stevenson Gear, New Process Gear and
Manning, Maxwell & Moore also use it, while
Gleason Works test cutter blades on it.

We find this Tester a very good proposition for us, as the prime essential in a good scale is hard pivots and bearings. In years gone by these have been tested with a file which was not a satisfactory method. Today, we test all bearing steels with your machine and believe the danger of a soft bearing is entirely eliminated in BUFFALO SCALES.

We prefer the Rockwell to other Testers because it is easier to operate and the dial is much more easily read than the indicators of various kinds used on other machines.

Very truly yours,

BUFFALO SCALE COMPANY INC.

WILSON-MAEULEN COMPANY INC

Our men all over the country have demonstration testers

St. Mary's St. & Concord Ave., New York City

Keyseats Right On the Spot

No Dismantling—No Fuss



The BURR
Portable
Keyseater

Cuts keyways
up to 12" long,
in shafts up to 5"
diam., anywhere,
in any position.

next emergency—the cost is often saved on a single job. The seven sizes are quick and accurate. Hand or power driven. Over 9,000 in use. *Order yours today!*

JOHN T. BURR & SON

422 Kent Ave., Brooklyn, N. Y.

A SPINNER THIS KEYSEATING Miller

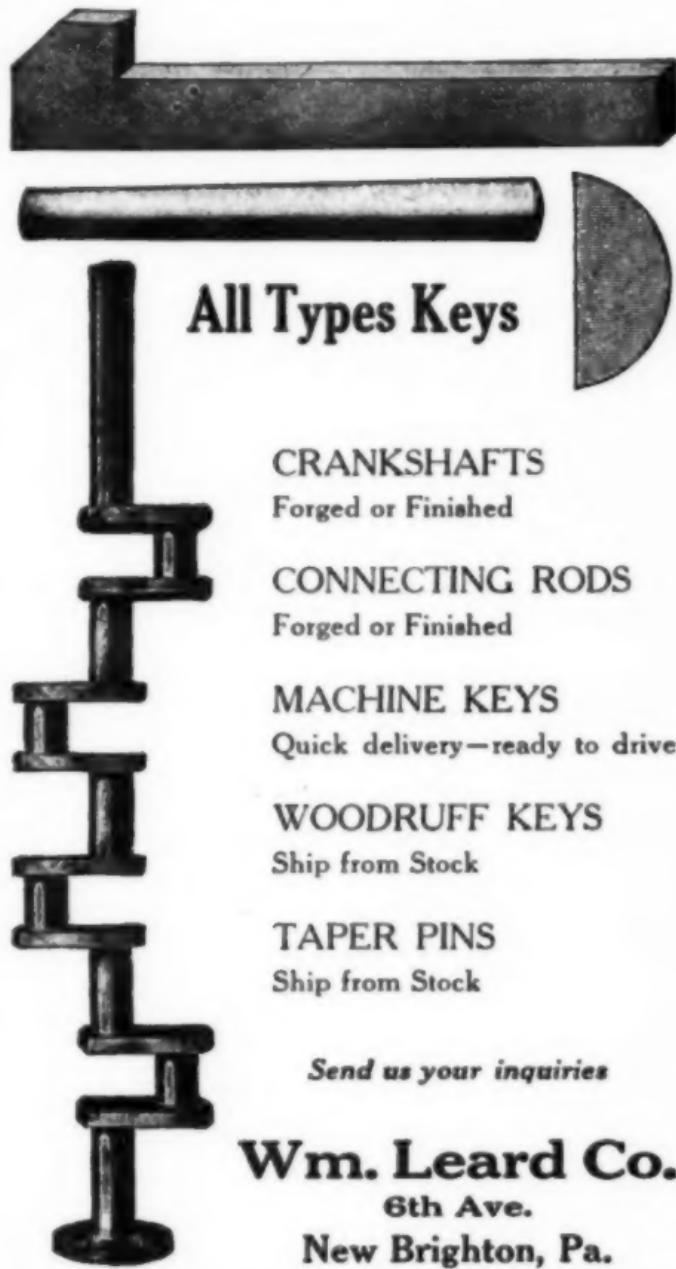
takes only a half minute to mill
a keyseat $\frac{1}{4}$ " wide, $\frac{1}{8}$ " deep, 2"
long in a cast iron collar. Can
you beat it?

*The asking will bring
Catalog O*

National Machine Tool Co.

2268 Spring Grove Ave., Cincinnati, O.





All Types Keys

CRANKSHAFTS

Forged or Finished

CONNECTING RODS

Forged or Finished

MACHINE KEYS

Quick delivery—ready to drive

WOODRUFF KEYS

Ship from Stock

TAPER PINS

Ship from Stock

Send us your inquiries

Wm. Leard Co.

6th Ave.

New Brighton, Pa.

For Sure Balance--

an absolutely level and solid "Way" is necessary

Bowsher "Balancing Ways"



are brought to an absolute *level* in ten seconds.
No revolving parts.

The edges or "knives" upon which the work is tested are ground *true*, and are mounted upon the planed "ways" of a heavy bed or frame.

Standards adjustable to suit length of arbor.

Three sizes for floor—one for bench use

Send for Catalog "F"

The N. P. Bowsher Co., South Bend, Ind.

Anderson Improved Balancing Ways

Ever-Ready—Sensitive—Reliable



They need no adjusting. The rotating discs made of chilled iron run in specially designed ball bearings and are exceptionally sensitive. You will like 'em.

The six sizes have no equal for balancing pulleys, gin brushes, turbine rotors, crank shafts, polishing wheels, fly wheels, etc.

"Swing"	20"	40"	60"	72"	96"	72"
Greatest distance bet. standards..	20"	30"	30"	66"	88"	20'
Capacity in lbs.	1000	2000	2000	5000	10000	24000
Approx. shipping weight.....	45	90	150	350	650	
Code	Bend	Bid	Bis	Bib	Ben	

Any of above can be furnished with longer shafts

Anderson Bros. Mfg. Co.

1915 Kishwaukee St., Rockford, Ill.

Our Line Covers All Your Keyseating Needs

And Every Catlin Cuts Keyseating Costs



*Supreme
in Speed
Capacity
Simplicity*

CATLINS are used and giving solid satisfaction both at home and abroad, in shops and plants of every size and description.

This universal popularity can be ascribed to three characteristics of the Catlins—they

- (1) do better work
- (2) in less time and
- (3) at less cost.

In construction they are a happy combination of simplicity and sturdiness. Catlins have less than half the number of parts of other keyseaters, and those parts are thoroly substantial without being clumsy. The picture shows the Catlin No. 1, belt driven, with three-step cone pulley. We also build them for motor drive.

Glad to mail you the folder, shop records, and partial list of big plants where Catlins have made good

Chattanooga Machinery Company
2401 Bennett Ave., Chattanooga, Tenn.

**Weigel
Single-Wheel
"Kwality Kaster"**

Will not crush or break. Swivels on steel machined rollers. The best single caster on the market.

**Double-Wheel
"Trukaster"**

Lasts three times as long as others. Easiest running, strongest, and most durable double-wheel caster made. Has heavy plates and axes.

Write for Price List

**THE HAMILTON
CASTER & MFG. CO.
HAMILTON, OHIO**



**New "AUTEX"
Extension Reel**

1925 Model

**Don't Forget the Swivel Joint Feature
Permits of carrying the lamp
in any direction.**

Type 6
Rapidly finding a place in large
Industrial Plants, Machine
Shops and Service Stations.

Now equipped with Belden Rubber Cord
Approved by the Underwriters

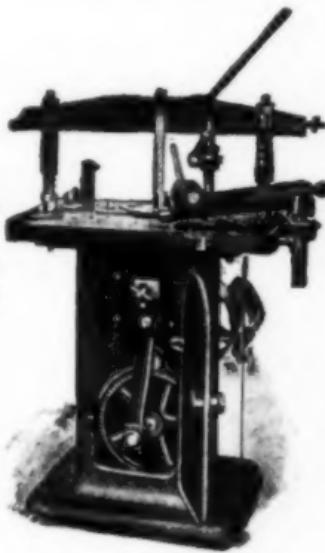
Write for descriptive circular

The Cincinnati Specialty Mfg. Co., Inc.
1903 Powers St., Cincinnati, Ohio

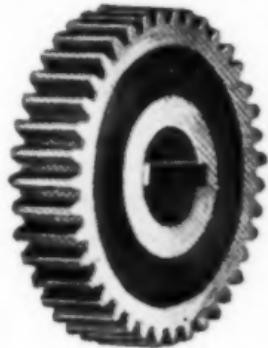
The Davis Keyseater



Built in two sizes
Nos. 1 and 2



And
The
Job



The Cutter



In sizes from
 $\frac{1}{8}$ to 1-inch

Cuts key-
ways in pul-
leys, gearblanks,
bell cranks, crank
handles, etc.; does
slotting & oil grooving.

Write for folder, with table of cutting time

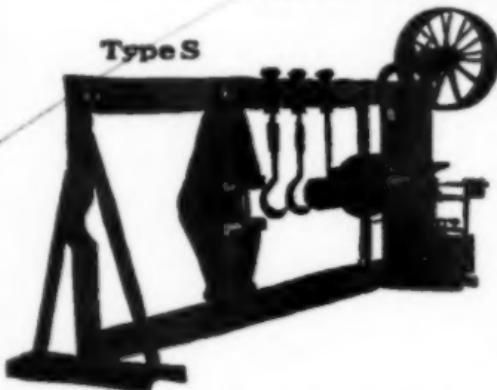
Davis Keyseater Company
255½ Mill Street, Rochester, N. Y., U. S. A.

Lourie Wheel Presses

are made
with—

CAST STEEL CROSSHEADS
I-BEAM BUTTRESSES
DIFFERENTIAL PUMPS

Type S



There are no
better WHEEL
PRESSES, few
as good.

Made in any
tons capacity.

Any distance
between Strain
Bars.

Any length of
Ram Stroke.

LOURIE MFG. CO., Springfield, Ill., U.S.A.

Atlas Arbor Presses

For All Forging Operations

Illustration shows our
No. 55 Power Drive
Press, which is adapta-
ble for fast production
work and capable of
supplying ten tons pres-
sure.

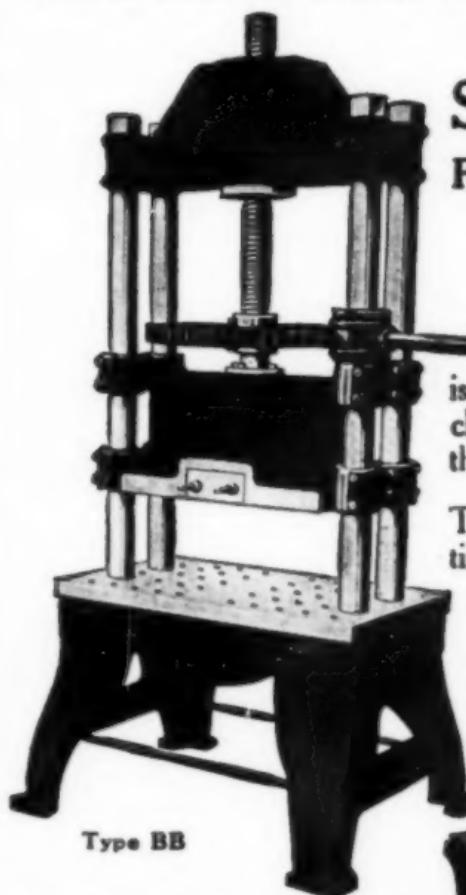


*Write for our Bulletin—
showing 30 different sizes*

Atlas Press Co.

*Department B,
Kalamazoo, Michigan*

Two Real Cost Reducers—



Type BB

A Four-Post Screw Press For Die Makers

Capacity, 80 tons
Table, 20"x36"

This extremely rigid press is made for a heavier class of work than our three smaller sizes.

They all save hours of time in fitting dies. *One man does the work.* Affords perfect alignment between punch and die.

And the other—a Surface Grinder

Powerful—rigid—accurate—no vibration—no noise—a revelation in quiet efficiency. Graduated feeds.

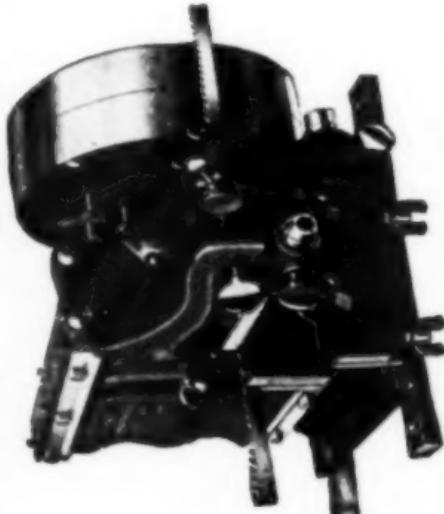
Details and prices for a postal

**JARECKI MACHINE
AND TOOL CO.**

Successor to Manhattan Machine & Tool Works
Dept. A. GRAND RAPIDS, MICH.

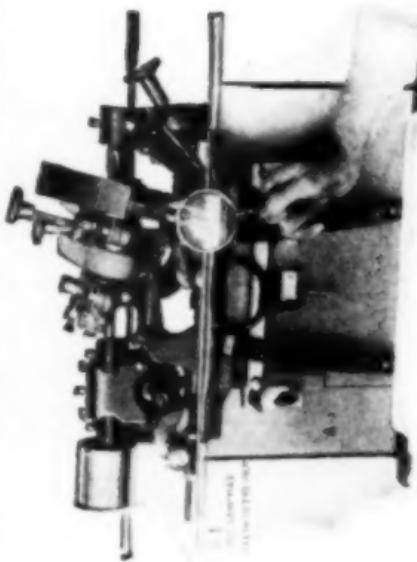


YOUR BRONZE BRASS OR WOOD SAWs



HOW
DO
YOU
RENEW
THEM?

FOR 5¢
YOU
CAN
DO IT



HOW
DO
YOU
RENEW
THEM?

FOR 5¢
YOU
CAN
DO IT

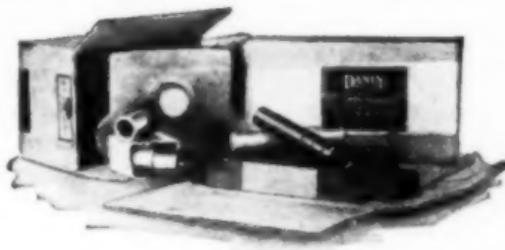
Model K, IN ONE OPERATION FILES and SETS medium or soft tempered bands. The most powerfully constructed machine of this type made. Used by the largest saw makers. They know. Write for specifications on same.

Write for catalog

Write for FREE booklet

108 Hamilton Ave., THE WARDWELL MFG. CO., CLEVELAND, OHIO

Something Really New!



Die Sets in the "Knock Down"

Danly Standard Die Sets, completely machined, but in the "knock down," are now available—each element packed in a carton, sealed, ready for shipment from stock, plainly marked for identification, ready for immediate use.



All sizes and combinations are standardized, interchangeable and replaceable. You can now make your own die sets with Danly Standard parts at a worth-while saving. Ask for the facts about this new, far-reaching Danly Service.

[*Write, wire or 'phone nearest
warehouse*]

Danly Machine Specialties, Inc.
4913 Lincoln Avenue, CHICAGO

Detroit, Mich.
1537 Temple Ave.

Long Island City, N. Y.
35 Wilbur Ave.



Nos. 1, 2 & 5

When All Is Said

and done, you cannot beat our line of tools for cutting sheet, bar or round rods in iron or mild steels.

You can use our line of

Hercules' Shears and Rod Cutters

For cutting card, straw and fibre boards, brass and copper, gold and silver sheets, and hard rubber compositions.

Catalog No. 2 on request.

W. C. & F. C. TUCKER
HARTFORD, CONN.



Plain Shears No. 3 & 4

SOMETHING NEW



**Hand Power Presses, Shears, Notchers,
Punches and Dies, Etc.**

Write for Booklet

J.F. Kidder Mfg. Co., Burlington, Vt.



The Old Way

Results in damaged shafts, bushings, pins and other parts, as well as accidents to the workmen.

With Nicholson Arbor Presses

all of these losses and accidents are eliminated, and considerable money is saved. Made in five sizes that take work up to 20⁴ in diameter and 31¹/₂ high and exerting pressures up to 9,000 lbs. Can make immediate delivery on all sizes and will be glad to send any size on trial.

Nicholson Expanding Mandrels

Save space—A set of nine does the work of several hundred solid mandrels.

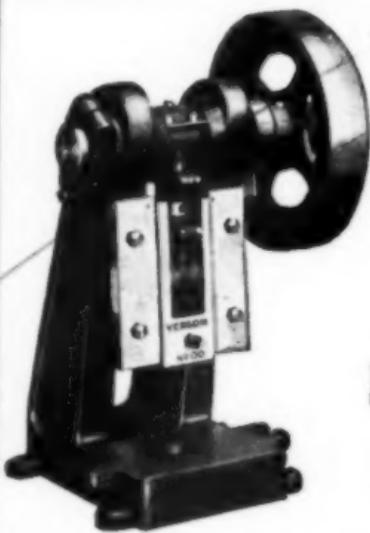
Save time—Instantly fit any hole round or square, from 1/2" to 7".

Save labor—No need to caliper a dozen or so solid mandrels, or turn one down to fit certain job.

Write for literature and 30-day trial plan

W. H. Nicholson & Co.
117 Oregon St., Wilkes-Barre, Pa.





Trade **Verson** Mark

Is a symbol of
QUALITY
found only on Verson
Power Presses
Arbor Presses
and
Angle Shears

For the prevention of accidents
insist on Verson presses.

They are equipped with an
Automatic Safety Clutch

Write for Circular

La Salle Machine Works

3013 S. La Salle St.,
CHICAGO, ILL.

There with the Punch

Great Power backed by
heavy rugged design enable

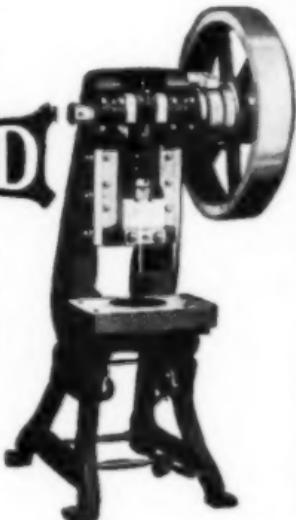
HIGH DUTY
ROCKFORD
PUNCH PRESSES

to out-punch and out-work
any press of their capacity.

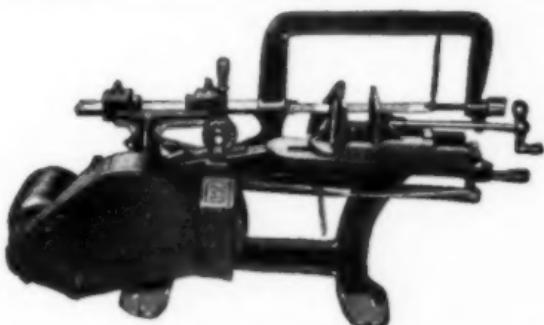
Their punch-ability and
accuracy will surprise you.

Write for catalog

Rockford Iron Works
ROCKFORD, ILL.



A GENERAL WORK
Motor Driven Hack Saw
Either Stationary or Portable



Marvel Draw-Cut Hack Saw No. 2

CAPACITY { 6'x6' on long stroke
8'x8' on short stroke

Here is a saw that is proving very popular—a motor-driven, substantial, smooth-running, general-purpose Hack Saw of good capacity, that is sold **at a reasonable price.**

It is furnished either with motor for a high-power circuit as a stationary machine, or with motor for an electric light circuit so it may be moved anywhere in the plant, the cord attached to the nearest lamp socket, and it's ready for business.

Motor is connected to driving crankshaft by silent chain, sprockets and intermediate cut gears enclosed in cast iron housing and guard and run in oil.

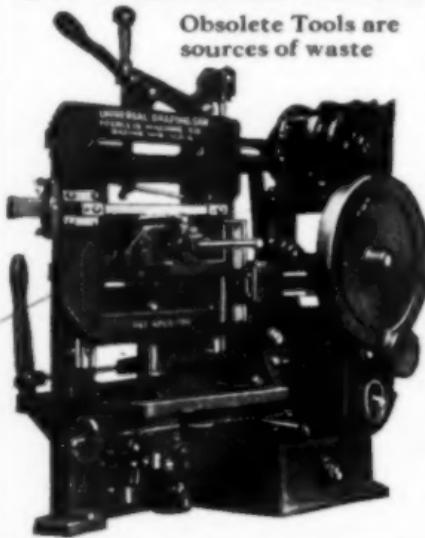
We can also furnish the No. 1 Motor Driven Hack Saw, portable, for light circuit, capacity 4"x4". We make other Hack Saws, one of them entirely automatic, and the popular Marvel Metal Band Saw, all furnished either belt or motor drive; also the Marvel Punch, Shear and Bender. Tell us your requirements, and let us send you description and price of what you need.

Armstrong-Blum Mfg. Co.

341 N. Francisco Ave., CHICAGO, ILL.

-PEERLESS- **UNIVERSAL SHAPING SAW**

Obsolete Tools are
sources of waste



Latest and Most
Efficient in Hack-saws
Faster — More Accu-
rate and Economical

REDUCES

Cutting Time
Wasted Material
Blade Expense

ELIMINATES

Semi Finishing Jobs
Cap. 6"x6" & 13"x13"

PEERLESS

HIGH SPEED HACK-SAWS
6"x6" 9"x9" 13"x16"
Sturdy--Efficient--Reliable

Peerless Machine Co.

1609 Racine St.
Racine, Wisconsin

Write for Details

Our New Imperial Punch No. 8



Large throat clearance. Capacity $\frac{1}{4}$ " hole thru $\frac{1}{4}$ " iron.
Operating handles will not become disengaged. Roller
Bearing. No cams to wear out. Just right for standing
seams or sky-light work.

Whitney Metal Tool Company

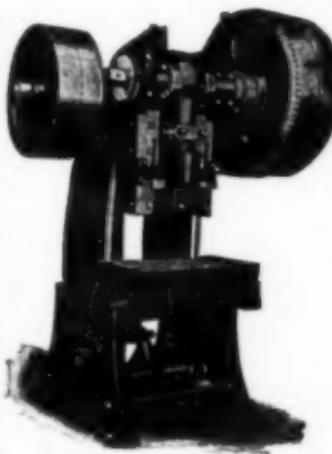
95 Forbes
Street

BALL BEARING PUNCHES

Rockford, Illinois, U.S.A.

95 Forbes
Street

A Quality Inclinable Press Backed by a Real Guarantee



A Loshbough - Jordan Press cannot be overloaded while operating within its rated speed. Any shaft or frame broken under these conditions and within year of purchase will be replaced gratis.

Many features for convenience and safety of operator; long, satisfactory service; quality and volume of output excellent.

*Let us tell you about them
—or better, let us send a
press on 30 days' trial.*

**Loshbough - Jordan
Tool & Machine Co.
Elkhart, Ind.**

T.H.L. Front Lever Bench Punch

Malleable iron body; working parts hardened. Steel shaft and plunger. Die cannot lose alignment with punch. All parts interchangeable. Built for hardest, toughest work.

PRICE \$45

Extra Punches, 20 cents each;
extra dies, 30 cents.

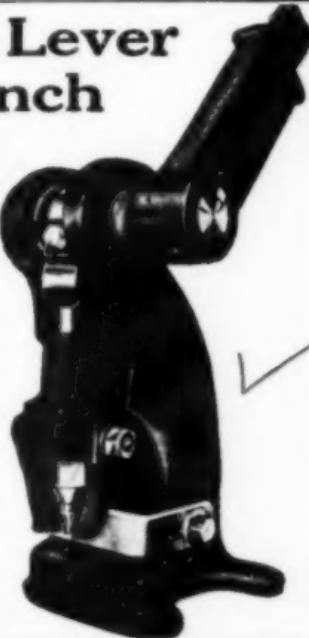
Capacity 13/32" thru 1 1/4" steel,
11/32" thru 5 16". Punches up
to 1 1/2". Weight, 70 lbs.

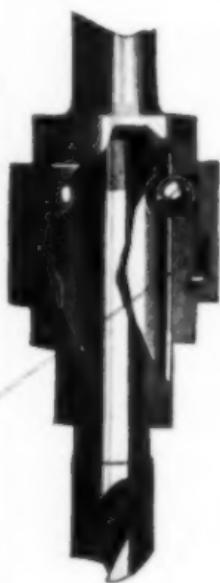
A good buy; can ship promptly

**T. H. LEWTHWAITE
MACHINE CO.**

(Est. 1890)

417 E. 31st St., NEW YORK





"Titan" Positive Drive Quick Change Drill Chuck

THE "TITAN" has the good features of other drill chucks, plus two special features, which make it the perfect chuck.

(1) *Quick Change*: Simply strike the end of drill, and out it comes. No hammer or special device required. A one-armed man can do it.

(2) *The Broken Tang Collet* is as positive a drive for broken tang drills as though they had never been broken. The saving is obvious.

*The "Titan" saves time and costs
Write for descriptive price list*

**Titan Tool Company
Erie, Penna.**

Sigourney Sensitive Drills

Plain or Ball Bearing
Belt or Motor Drive

Sigourney Sensitive Drills are *quality products*, extremely sensitive, accurate and durable, with all parts interchangeable.

The illustration shows a Sigourney ball bearing, motor driven, high speed drill press, made with one to four spindles, to be operated up to 5,000 r. p. m. The ball bearings are self-aligning, in double row.

Write for circulars and prices

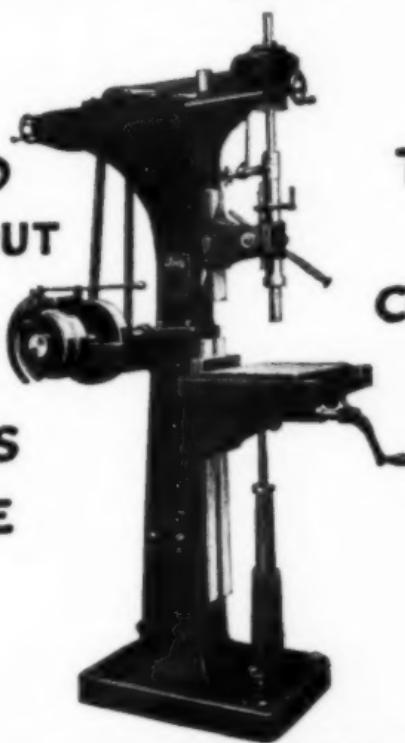
**Sigourney Tool Co.
Hartford, Conn., U.S.A.**



GET
THE
Avey

TO DO
WITHOUT
AN
AVEY
COSTS
MORE

THAN
IT
COSTS
TO
BUY
IT



THE AVEY DRILLING
MACHINE CO.
CINCINNATI
OHIO

The "Utility" Sleeve

A Detachable
Taper Shank
for
Straight
Shank
Tools



Cuts
Small
Tool Costs

Insert a straight shank drill or reamer in this Sleeve, and it works as efficiently as a solid taper shank tool.

Only the straight shank tool of high speed steel is discarded when worn or broken—not the entire taper shank tool. Cuts tool costs, saves time, increases output.

Write for "Utility Tools" Catalog

The J. C. Glenzer Company
6469 Epworth Blvd., DETROIT, MICH.

Drill Several Holes At the Cost of One



A U.S. Multiple Spindle Drill Head transforms your single-spindle drill into a multiple spindle.

You can drill two or more holes with the same speeds and feeds you use for drilling one.

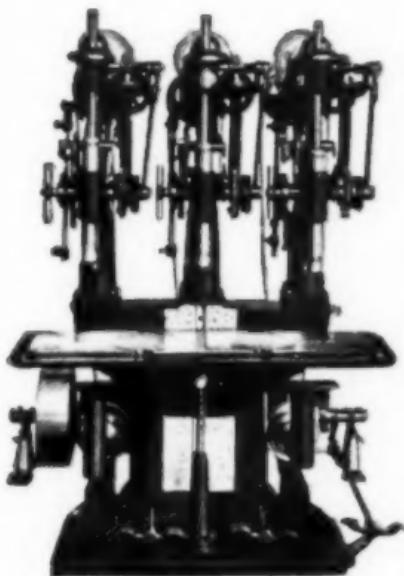
Patented double adjustment permits drilling in any pattern. Special heads made to order.

Let us help you reduce those drilling costs

The United States Drill Head Co., 1952 W. Sixth St., CINCINNATI, O.

Michigan Agents—National Sales Engineering Corp., Detroit, Mich.

ROCK-FORD Machine Insures -BOTTOM Drilling Costs



the ROCKFORD Automatic Gang Drilling Machine

"—superior in convenience, capacity and workmanship, a real top-notcher"

Built with
2, 3, 4 and 6 Spindles
Box Column Type

*Ask for Circular. Glad to
answer your questions.*

The Rockford Appeals to Superintendents — in fact, to all practical men who are responsible for results. As a producer it is second to none; as a modern, high-class, dependable machine it gives satisfaction and profits 'way above the average.

Automatic Return—When each spindle has completed its operation it automatically returns to its highest position, where it remains until the starting lever is tripped, when it immediately drops to position above the work.

By Removal—of the stop pin in the cam, the spindle will immediately return to lowest position above work, and when tripped by automatic stop, will return to highest position and immediately drop again to work, repeating the movement automatically until the power is shut off. The spindle can be pulled ahead of the feed while in operation, a great advantage in drilling thru a cored piece, piping or similar work.

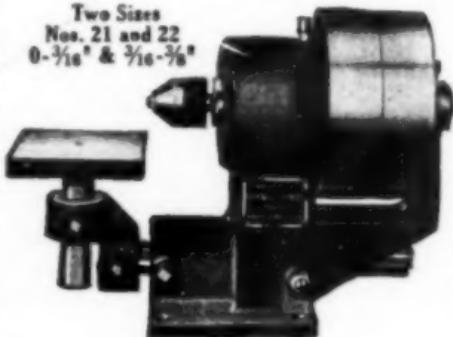
Rockford Drilling Machine Co.
Rockford, Illinois

High Grade Tapping Machine

At a price you can afford to pay

Here is a machine that will do your work, won't bother you with breakdowns and repairs, that your operators will like, and that you will like because it will give you production accuracy and a low installation and operating cost. Cannot give details in this space, but let us send them to you. You'll find it worth while.

Two Sizes
Nos. 21 and 22
0- $\frac{3}{16}$ " & $\frac{1}{16}$ - $\frac{3}{8}$ "

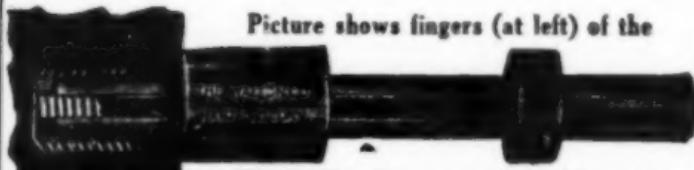


Your Address will bring them

Bicknell-Thomas Company
Greenfield, Mass.

So Easy to Take Out Broken Taps

Picture shows fingers (at left) of the



Walton Tap Extractor inserted in work—

All that is necessary now is to twist the tool forward and backward a few times to loosen the broken piece, and then it's easy to back out the tap, without injury to the threads.

The cost is small. Oftentimes it's returned to you in removing just one tap. Investigations by one of the largest makers of taps and dies in this country showed that about 90% of taps break while in use. This assures you that a Walton will earn its cost many, many times over. Sizes No. 8 to 1 $\frac{1}{4}$ ".

Shipped on 60 days' approval. Did you say "ship"?

THE WALTON CO., Hartford, Conn.

THE TAYLOR & FENN
Sensitive High-Speed Radial

Belt or
Motor
Drive



This Great Manufacturers' Drill—

combines the speed of the sensitive with the flexibility of the radial, for practically all drilling requirements within its range. Drill the big pieces on the base and the small pieces on the table.

Tapping heads, power feed heads or hand lever feed heads may be used singly or in combination.

The drive is positive, through gears and silent chain. The spindle has three speeds and is bored for No. 2 Morse taper.

*A thorough investigation of this machine will repay you
We shall be glad to furnish complete data upon request*

The Taylor & Fenn Co.
Hartford, Conn., U.S.A.

Thor

Electric Drills —

Lower Drilling Costs

WHEREVER you use a drill in your plant, you will find that a THOR will do the work better, faster, and more economically. The THOR is especially designed for speed, power and endurance.

A THOR is strong and powerful. They seldom need repairs. The reason is because of its rugged construction. A THOR has ball and roller bearings—is easy running and all friction is eliminated. This means better work and lower costs.



Jacobs Chucks Regular Equipment

Our new illustrated catalog—just out—shows the various types of THOR Drills. Why not write for a copy? It will show you ways to cut your drilling costs. We also manufacture the World Famous THOR Pneumatic Tools.

Independent Pneumatic Tool Co.
600 W. Jackson Blvd.,

Chicago, Ill.



Why Break Taps?

The Woodstock Improved Safety Tapping Chucks Eliminate this Waste

No matter how difficult the work, the Woodstock makes it safe to tap tough metals, blind tapping, and bottom tapping in shallow holes where a stop on a machine becomes a joke.

This money-saver automatically releases tap the minute it binds or strikes bottom. The five sizes use standard taps.

Glad to send you one on trial

Peter Bros. Mfg. Co., 115 Railroad St.,
ALGONQUIN, ILL.



Threading at 3000 R. P. M.

These rods are being threaded with a No. 8-32 thread 5-16" long, at an average production of 1400 pieces per hour on our Standard High Speed Tapping Machine.

*How about your
threaded work?*

Leland-Gifford Co.
Worcester, Mass., U. S. A.



The BARKER GENERAL PURPOSE VISE

For Planers, Shapers, Drilling and Milling Machines



Two Sizes

Width of jaws 11½"-12"
Depth of jaws 2½"-3"
Jaws open 8"-12"
Weight 180-210 lbs.

Also 16" Mold Makers' Vise

OUR MOLD MAKERS' VISE has 13" width of jaws, 7" depth, and jaws open 16"-weight 290 lbs.

ALL BARKER VISES are made extra heavy, with steel faced jaws, and are graduated to swivel any angle. They stand lots of hard usage.

Get in touch with us before buying

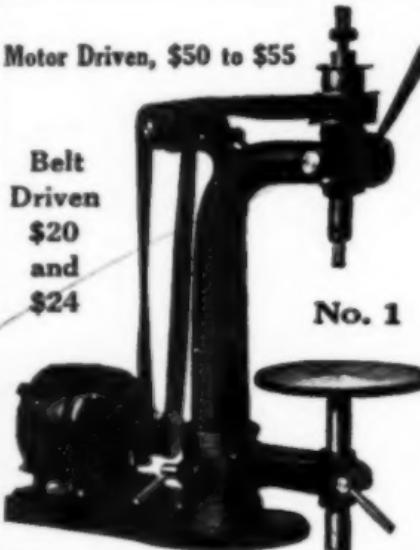
WM. BARKER & CO.

Manufacturer of Machine Tools,

COVINGTON, KY.

Motor Driven, \$50 to \$55

Belt
Driven
\$20
and
\$24



No. 1

Burke 10" **BENCH DRILL**

Extremely accurate,
very sensitive and
of Burke Quality.

Excellent for pro-
duction work. A real
time and money
saver when placed
at convenient points
about the shop.

*Send for Catalog
of Drilling, Tapping
and Milling Machines*

The Burke Machine Tool Co., 297 E. 16th St.,
Conneaut, Ohio

NEW PRICES

ETTCO

**KEYLESS DRILL
CHUCKS**



PRICES

No. 1	Ettco—0 to 17/64"	\$ 5.50
No. 2	Ettco—0 to 25/64"	6.50
No. 3	Ettco—0 to 17/32"	9.00
No. 3½	Ettco—1/8 to 5/16"	11.00
No. 1	Morse Taper Shank...	.75
No. 2	Morse Taper Shank...	.75
No. 3	Morse Taper Shank...	1.00
No. 4	Morse Taper Shank... 1/2" and 41/64" Straight Shank..	1.50 1.00

Chucks—Less 20%.

Morse Taper Shanks—Net.

ETTCO Drill Chucks are especially adapted to Electric and Air Drills. No key to lose. Chuck is Self-tightening, so drill will not slip after the work is started.

Information to equip Electric or Air Drill:—Capacity of Drill and Make.

Special Exchange Feature!

See Your Dealer or Write Us

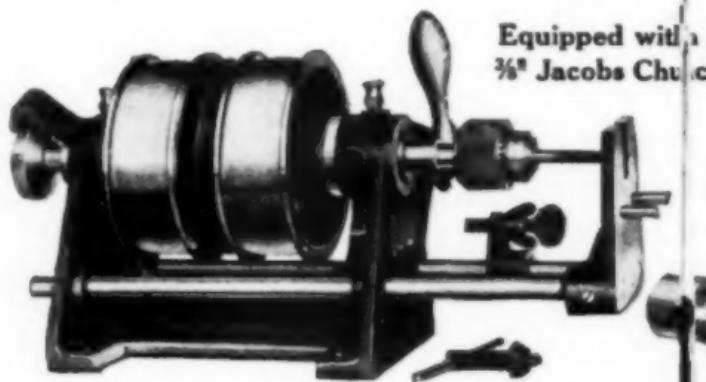
We will allow you a special discount of 35% on exchange of chucks. We will accept any chuck from you regardless of make or condition, and replace it with a new Ettco Keyless Drill Chuck, at the above discount.

Eastern Tube & Tool Co., Inc.

580 Johnson Ave., Brooklyn, N. Y.

Jacob
Chu

“The Bench” Tapping:



Equipped with
¾" Jacobs Chuc

You'll like this Tapper. For furth

THE BENCH MACHINE TOOL COMPANY

*This advertisement
interests of good Dr
by the makers of the*

Speed up y



Tapping Machine No. 2

For 3/16" to 3/8" TAPS and DIES

equipped with a
Jacobs Chuck



For Production Tapping on a variety of work. Tapping speeds, 300 to 1500 r. p. m., limited only by the speed a tap will stand. It easily taps from 10 to 30 holes a minute.

Entirely Self-Contained. A clutch shifter and lock are built into the machine, which eliminates the usual countershaft.

Easy to Operate. No skill is required, the operation being very simple—thus combining speed with ease of handling. Then there is "The Bench" No. 1, for smaller work, which is made especially sensitive.

For further information, just drop a line to—

COMPANY, 220 N. 13th St., Philadelphia, Pa.

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is published in the
elling Equipment
Jacobs Chuck

up your work with good tools



Steel Bearing Balls

Brass, Bronze, Aluminum
and Monel Metal Balls

Steel
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Balls



Burnishing
Cones
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Pins

Immediate Shipments from Stock

Ask for Price List 23-H

The Abbott Ball Company
Elmwood District, Hartford, Conn.

Actual Riveting Results

Are Most Convincing

Send us sample of your most difficult work, in close corners or out-of-the-way places, let us rivet it on the—

Grant Rotary Riveter

—and we will return it with time and cost estimate.

The "Grant" produces highly polished heads, without hammer or tool marks. Speed, a rivet per second. May be operated by cheap help. And it's noiseless.

*Send along your sample for riveting
And ask for the Catalog*



The Grant Mfg. & Machine Co.
C. E. Station, Bridgeport, Conn.

Better Tapping Machines?

Use the "R-S" Friction Driven



Vertical Tappers

Equipped throughout with SKF thrust bearings. All annular bearings of phosphor bronze. Spindle travels to and from the work. Floor type only. Sizes, $\frac{1}{4}$ " and $\frac{1}{2}$ ".

Horizontal Tappers

Efficient and time saving. Can be direct connected to motor. Sizes, $3/16$ ", $5/16$ " and $5/8$ ". Bench or floor type.

Radial Tappers

Reduce handling of heavy auto and machine tool parts. Topnotch manufacturing machines that increase output and profits. Capacity of $\frac{1}{2}$ " in steel.

The Friction Drive

is under perfect control and highly efficient. The instantaneous reversing mechanism prevents breakage of tools.

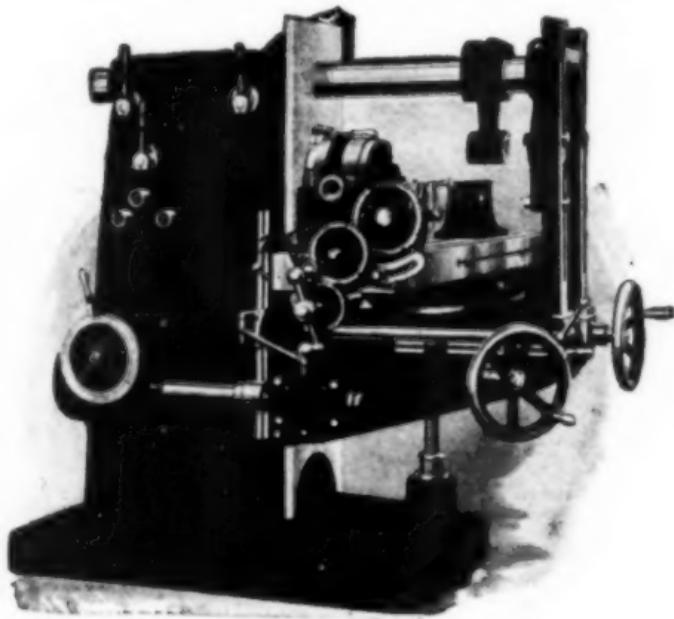
*Complete details are given in our
Tapping Machine Bulletin.
Send for it now—why wait?*

Rickert-Shafer Company

1110 Cherry Street,

ERIE, PENNA.

30 New Milling Machines Reduced \$1000



20 Universal and 10 Plain Millers carrying our guarantee, will be sold at prices only a little above the second-hand machinery market.

Features: Combined Helix and Worm Drive to Spindle; direct reading index for feeds; range, Plain 35" x 14 $\frac{1}{2}$ " x 20"; Universal 34" x 13" x 18 $\frac{1}{2}$ ".

PRICES

Plain..... \$1400.00

Universal \$1800.00

F. O. B. Chicago

Write for a complete description of these machines

JOSEPH T. RYERSON & SON INC.

CHICAGO MILWAUKEE ST. LOUIS DETROIT
CINCINNATI BUFFALO NEW YORK

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Lists of Second-Hand Machinery, either For Sale, Wanted or For Exchange, set in uniform style, will be published under this heading at the rate of **50 cents a line**, across the page, each issue, plus **\$2.50** for name and address. Minimum charge, **\$5.00**. No display permitted in this department.

Write directly to those offering the machines for sale for prices and full descriptions. If what you seek is not listed, use the blank enclosed to make known your wants to the publisher, who will pass them along to all Machine Tool Blue Book advertisers.

Circulation of Machine Tool Blue Book, 25,000

FOR SALE BY

Atlantic Manufacturing Company, - - - Wilmington, Del.

BELTING.

Fine lot of used reconstructed leather belting. Also several sizes new stock and pressed steel pulleys. Special prices. Write.

FOR SALE BY

Eastern Machinery Co., 408 East Pearl St., Cincinnati, Ohio

RADIAL DRILLS.

Two—4' Fosdick heavy duty plain radial drills, gear box drive, tapping attachments, and complete with square box tables; very late type and 95% new condition; special low prices.

FOR SALE BY

The Reeve-Fritts Company, 558 Washington Blvd., Chicago, Ill.

Drill, 30" C. & O. radial.
Filing machine, No. 3 Barry, floor.
Grinder, Grand Rapids, drill.
Grinder, No. 1 Besly, disc, 12".
Lathe, 10"x4' Prentiss.

Lathe, 13"x6' Willard.
Miller, No. 2 Becker universal.
Screw mach., No. 3 Foster, pr. fd. tr.
Screw mach., No. 2 Foster.
Spot welder, Taylor, 1" capacity.

FOR SALE BY

Hamblin & Russell Mfg. Co., - - - Worcester, Mass.

STEAM ENGINE.

One Brown steam engine, 100 to 150 h. p.; diam. of cylinder 13"x34" face stroke; diam. of drive wheel 11', with face 19½. In perfect order; has not been used since the war. Net weight 16,500 lbs. Built in Fitchburg, Mass., 1912. Price today new \$2,500. Our price f. o. b. cars \$650.

FOR SALE BY

W. P. Little Co., West 9th & Front Sta., Cleveland, Ohio

RADIAL AND MULTIPLE DRILL PRESSES.

4' arm W. E. Gang radial.
Kickert & Shafer radial tapper.

3' arm Aurora radial.

1-spindle Rockford, auto. feeds.

LATHES.

16"x 6' Bradford, q. c. and t. a.
16"x10 Cincinnati, d. b. g. & q. c. g.

16"x 8' F. E. Reed, taper attach.

18"x 8' Porter, d. b. g.

MILLING MACHINES.

18" Cincinnati, back geared.

U. S. hand miller.

PUNCH PRESSES.

No. 3 Long & Allstater, dbl. end.

No. 14½ Williams & White, (2).

INTERNAL GRINDERS.

No. 6 Bryant internal.

No. 75 Heald internal.

MISCELLANEOUS.

Broach, 3-A LaPointe Hudson.
Hammer, 50 lb. Bradley upright.
Hammer, 250 lb. Morgan steam.

Spline miller, 2" Pratt & Whitney.

Turret, No. 4 Warner & Swasey.

Turret, No. 6 Warner & Swasey.

SECOND-HAND MACHINERY

FOR SALE BY

Cyril J. Bath & Co., 6900 Machinery Ave., N. E., Cleveland, O.
BORING MILLS.

36"—44" Niles, with side head, 85%.

42" Baush, 2 swivel heads, 75%.

DRAW BENCHES.

15,000 lbs. to 25,000 lbs. Waterbury-Farrel, United Engineering and Standard; 20" draw, with 18" extensions for mandrels, heavy cast iron; 85%.

DRILLS—MULTI-SPINDLE.

4-spindle 20" Barnes, 85%.

4-spindle Foote-Burt sensitive, 85%, (2).

DRILLS—RADIAL.

No. 3, 10' Cleveland Punch & Shear wall radials.

DRILLS—UPRIGHT.

Small 15" drills, 70%, (2).

20" Mechanics-Rockford, 60%.

24" Rockford, as above, 65%.

24" Kokomo hi-speed, slid. hd., 85%.

24" Aurora, slid. hd., gr. fd., 85%, (2).

FORGING MACHINES

No. 3, Williams & White double end bulldozer, 80%.

1" Ajax, 75%, (3).

GRINDERS.

1½" all steel Acme, 85%.

No. 3 Brown & Sharpe univ., 70%.

10x36" Modern univ., and parts, 70%.

84" Diamond surface, 85%.

No. 75 Heald internal, with extra spindles and c/s., 85%.

HAMMERS.

No. 6 Naze, air. motor drive.

No. 8 Beaudry, power, arranged for motor drive, 80%.

100-lb. Bradley, helve, 75%.

500-lb. Bradley, upright helve, 80%.

600-lb. Merrill, board drop, 75%.

800-lb. Billings & S., board drop, 75%.

800-lb. Waterbury-F., board dr., 75%.

LATHES.

14"x8" Hendey tool room, t. a., 75%.

16"x8" Hamilton, belt feed, 50%.

16"x9" Lehmann, 85%.

16"x9" Chard, with chucks, 90%.

18"x8" Lodge & Shipley, 70%, (4).

18"x8" American, 3-step cone, late model, compound rest, 85%.

19"x8" LeBlond, friction hd., 60%.

MILLING MACHINES.

Style "B" Gooley & Edlund, 80%, (2).

20"x7"x18" Oesterlein plain, 80%.

No. 0 Steptoe plain, univ. heads, 90%.

No. 0 Rockford, new.

No. 1 Rockford pl. bk. geared, 90%.

No. 2 Brown & Sharpe vertical, 80%.

No. 3 Brown & Sharpe, plain, 65%.

No. 3B Brown & S., pl., heavy, 60%.

PLANERS.

22"x24"x57" Fitchburg, 75%.

24"x24"x6" Liberty, 1 head, new.

24"x8" Pond, single head, 50%.

30"x30"x8" Gray, single head, 80%.

PIPE MACHINES.

4" Jarecki, with dies and countershaft, late model, 85%.

8" Jarecki, with dies and countershaft, late model, 85%.

SECOND-HAND MACHINERY

Cyril J. Bath & Co.—Continued

PRESSES.

Waterbury-Farrel trimmers, 56" flywheel, 4" stroke, 60%, (3).

No. 57 Toledo trimmer, with side shear, 80%.

Small Pratt & Whitney trimmer, stroke 3", 70%.

No. 57 Toledo trimmer, geared, 80%.

No. 54 Bliss trimmer, 80%.

Waterbury-Farrel trimmers, 60" flywheel, 80%, (2).

No. 55 Cleveland trimmer, 85%.

Old No. 56 Toledo trimmer, 75%.

P4 Ferracute, 50%.

59 $\frac{1}{2}$ Toledo, straight side, single crank, tie rod frame, 80%.

No. 6 Niagara inclinable, 75%.

PUNCHES AND SHEARS.

No. 2 Hilles & Jones horizontal punch, 70%.

54" gap American ship punch, capacity 1" thru 1", 70%.

5" Pels bar shear, all steel frame, 85%.

SLOTTERS.

10" Newton, with countershaft, 75%.

16"-18" Dill; adjusting ram, arranged for motor drive, 80%.

12" Sellers, 75%.

SAWS.

No. 3 Ajax hot saw and burring machine, complete, 80%.

6" Racine hack saw, 75%.

21" Averbeck, 75%.

9" Racine hack saw, 75%.

24" Walcott, crank, back geared, 90%.

SHAPERS.

20" American, crank, belt, 80%.

24" Gould & Eberhardt crank, back geared, 85%, (2).

21" Gisholt, standard model, 70%.

NO. 4 Bardons & Oliver, 50%.

WOODWORKING TOOLS.

12" Fay & Egan pattern lathe, 90%.

15" Silver post drill, 90%.

Fay & Egan pony planer, 90%.

Fay & Egan ripsaw, 90%.

MISCELLANEOUS.

Air compressor, 14"x12" Ingersoll-Rand, with tank, class E. R. I., serial No. 33413, 85%.

Blower, American, 9' fan, motor driven, 85%.

Blowers, Sturtevant, motor driven, 85%, (2).

Boring machine, for cylinders, portable, 4" bar, 7" feed, arranged for motor or engine drive, 75%.

Gear cutter, 36" Gould & Eberhardt, 60%.

Gear hobs, No. 12 Barber-Colman, 90%, (2).

Magnetic chucks, 90%, (2).

Riveter, Hanna I-beam frame, 12" gap, 90%.

FOR SALE BY

The O'Brien Machinery Co.,

Drill, 32" Aurora, motor driven, tapping attachment.

Hammer, 100 lb. Massillon, steam.

Lathe, 22"x11' Lehmann, geared head, taper attachment.

Lathe, 22"x12' Mueller.

Lathe, 24"x12' Schumacher & Boye.

Lathe, 26"x21' Whitcomb-B., nitr.dr.

Lathe, 36"x19' L. & S., taper attach.

Miller, No. 3-H LeBlond plain.

Miller, No. 3-B Hendey plain.

Miller, No. 3 Kempsmith universal.

Pipe machines, 2", 4", 6", 8" & 12"

Oster, Cox, Eaton-Cole & Burnham and Jarecki makes, belt or motor driven, complete stock.

Planer, 36"x36"x12" Woodward & Powell, motor driven, 3 heads.

113 N. Third St., Philadelphia, Pa.

Presses, Nos. 18, 19 and 20 Bliss.

Planer, 54"x34"x14' Pond Machine Tool Co., two heads.

Press, No. 54 Toledo gr. str. side.

Punch and shear, No. 3 Hilles & J., dbl. end, motor dr.; punch end,

42" thrt., cap. 1 $\frac{1}{2}$ " thru 1"; shearing

end, 36" thrt., cap. 1" plate, 2 $\frac{1}{2}$ "

round, 7"x1 $\frac{1}{2}$ " flat, 5"x5"x $\frac{1}{2}$ " angle.

Radial drill, 36" Gang.

Radial drill, 5' Mueller.

Shapers, 12", 14", 16", 21" and 24" stroke, assorted makes.

Trimming press, No. 75 $\frac{1}{2}$ Bliss, straight side, with side shear attachment.

Turret lathe, No. 6 $\frac{1}{2}$ Bardons & Oliver, wire feed, cabinet base.

SECOND-HAND MACHINERY

FOR SALE BY

Niles-Bement-Pond Company, - 111 Broadway, New York
Located at our various factories

A Partial List of the Machines is given herewith

LATHES.

- 10' x 5' Pratt & W., toolmakers'.
- 14' x 6' Pratt & Whitney.
- 14' x 8' Pratt & Whitney.
- 16' x 8' Pratt & Whitney.
- 16" Pratt & Whitney toolroom.
- 17" x 8' LeBlond, motor drive.
- 18" x 10' Bement.
- 20" x 12' Bement.
- 21" x 10' LeBlond, motor drive.
- 24" x 14' Pond, quick change.
- 26" x 10' Pond, motor drive.
- 26" x 16' Pond, quick change.

- 30" x 14' Pond, quick change.
- 32" x 17' Pond, triple geared.
- 32" x 18' Bement, triple grd.. mtr.
- 36" x 12' Pond, triple grd.. motor dr.
- 36" x 17' Pond, triple grd.. motor dr.
- 36" x 28' Bement, triple geared.
- 36" x 76' Bement shafting lathe.
- 48" x 25' Niles, triple geared.
- 60" x 44' Pond, motor drive.
- 24" x 26" Pratt & W. turret lathe.
- 3" x 36" Pratt & W. turret lathe.
- 32" Pond rigid turret lathe.

PLANERS.

- 24" x 24" x 6' Whitcomb.
- 24" x 24" x 10' Whitcomb.
- 26" x 26" x 6' Gray.
- 30" x 30" x 6' Pond, 2 hds., rev.mtr.dr.
- 30" x 30" x 12' Pond, 2 hds., rev.mtr.dr.
- 36" x 36" x 12' Bement, 4 hds., paral. dr.
- 36" x 36" x 14' heavy Pond planer, 4 heads, reversing motor drive.
- 36" x 36" x 24' Bement, 4 hds., paral.dr.
- 38" x 38" x 12' Niles, 4 hds., parallel dr.
- 42" x 42" x 18' Pond, 4 hds., parallel dr.
- 42" x 42" x 26' heavy Pond planer, 4 heads, reversing motor drive.

- 48" x 48" x 20' Pond, 4 hds., rev.mtr.dr.
- 84" x 54" x 18' Pond, 4 hds., rev.mtr.dr.
- 60" x 60" x 20' Niles, 3 hds, parallel dr.
- 60" x 60" x 20' Pond, 4 hds., rev.mtr.dr.
- 72" x 60" x 14' Bement, 4 heads, reversing motor drive.
- 72" x 72" x 32' Ridgway, 4 heads
- 96" x 84" x 42' Bement, 5 heads, reversing motor drive.
- 120" x 120" x 36' Betts, 4 heads, motor drive thru belts.
- 148" x 96" x 36' Bement, 5 hds., r. m. d.

SHAPERS AND SLOTTERS.

- 17" Bement dbl. trav. hd. shaper.
- 22" Bement single traveling head shaper, motor driven.
- 6" Bement slotter.

- 10" Bement slotter.
- 15" Bement slotter, motor driven.
- 21" Bement slotter.
- 30" Bement slotter, motor driven.

MILLING

- No. 3 Brown & Sharpe plain, motor driven.
- No. 3 LeBlond plain, single pulley.
- No. 3 Cincinnati, vert., m. d.
- No. 5 Brown & Sharpe plain.

MACHINES.

- No. 5 Brown & Sharpe vertical.
- 6" x 48" Pratt & W. thread miller.
- 6" x 80" Pratt & W. thread miller.
- 6" x 132" Pratt & W. thread miller.

GEAR CUTTERS.

- No. 3 Brown & Sharpe spur.
- No. 4 Brown & Sharpe spur.
- No. 4 Newark spur, motor driven.

- No. 5 Brown & Sharpe spur.
- No. 5 Newark spur.
- No. 6 Brown & Sharpe spur.

DRILLING

- 32" Aurora.
- 40" Bement "Goose-neck" drill.
- No. 13 Pratt & Whitney adjustable multi spindle.
- No. 2 Bement cotter & keyseat drill.
- 5" Ridgway radial, motor driven.

MACHINES.

- 6" Ridgway radial, motor driven.
- 6" Pond radial, motor driven.
- 6" Niles semi-universal radial, motor driven.
- 6" Niles univ. radial, motor driven.
- 8" Pond radial, motor driven.

VERTICAL BORING MACHINES.

- 36"-44" Niles side hd. mill, motor dr.
- 37" Niles boring & turn'g mill, m. d.
- 50" and 60" Niles pulley borers.

- 100" Niles boring & turn'g mill,m.d.
- 10' Niles boring & turn'g mill, m. d.

HORIZONTAL BORING MACHINES.

- 46" Bement horizontal boring and drilling machine, 25" bar.
- 60" Bement horizontal boring and drilling machine, 25" bar.
- 62" Bement horizontal boring and drilling machine, 35" bar.
- 66" Bement horizontal boring and drilling machine, 45" bar.
- 80" Bement horizontal boring and drilling machine, 55" bar, motor driven.
- 60" Bement duplex control boring machine, 35" bar, motor driven.
- 72" Bement duplex control boring machine, 45" bar, motor driven.
- Pond floor drill, 3" bar.

SECOND-HAND MACHINERY

Niles-Bement-Pond Company—Continued

HORIZONTAL BORING MACHINES—Continued.

Bement boring, drilling and milling machine, 36" bar, motor driven.
 Niles boring, drilling and milling machine, 44" bar, motor driven.
 Niles boring, drilling and milling machine, 5" bar, motor driven.
 Niles boring, drilling and milling machine, 64" bar.

Bement boring, drilling and milling machine, 6" bar, motor driven.

ELECTRIC TRAVELING CRANES, 220 V. D. C.

50-ton crane, 60' span.	3-ton crane, 20' $\frac{1}{2}$ ' span.
30-ton crane, 50' span.	2-ton crane, 19' span.
25-ton crane, 45' span.	4-ton Yale & Towne electric hoist on 28' span crane bridge.
5-ton crane, 20' span.	5-ton electric jib crane, 28' boom.
3-ton crane, 22' 6" span.	

POWER HOUSE EQUIPMENT.

200 k. w. Thompson-Ryan generator, 250 volts, direct current, direct connected to Corliss steam engine, 100 r. p. m.
 100 k. w. Thompson-Ryan generator, 240 volts, direct current, direct connected to McEwen Ridgway engine, 250 r. p. m.
 250 k. w. General Electric synchronous converter, 2-phase, 60 cycle, with two transformers for 2300 volts—250 volts direct current.
 200 h. p. non-condensing Corliss engine.
 250 h. p. non-condensing Corliss twin engine.
 125 h. p. Philadelphia non-condensing cross-compound Corliss engine.
 10x10x12" Laidlaw, Dunn Gordon class J. E. duplex air compressor.

MISCELLANEOUS.

Bolt cutter, 2" Acme, single, m. d.
 Grinder, No. 3 B. & S. univ., mtr. dr.
 Grinder, 22"x7" Pratt & Whitney vertical surface, motor driven.
 Grinder, No. 71 Heald inter., mtr. dr.
 Hammer, 350 lb. Bement sgl. fr. stm.
 Pipe machine, 2" Cox, m. d.
 Punch, No. 3 L. & A., 48" throat, m. d., 1" thru 1".

Punch, "B" L. & A., 24" throat, m. d., 24" thru 14".
 Punch, No. 3 L. & A., hor., 12" thrt., m. d.
 Punch, "D" L. & A., dbl., 36" thrt., 3" thru 14".
 Shear, gate, No. 7 L. & A., 12" thrt., 72"x1".

All motor driven machines are for 220 volts, direct current.

FOR SALE BY

McCoy-Brandt Machinery Co.,

Air compressors, steam, 909, 2052 and 2200 cu. ft.
 Air compressors, 116 & 442 cu. ft.
 Air compressor, 179 cu. ft. belted to motor.
 Bolt cutter, 24" Landis, single head.
 Boring mill, 42" Bullard, New Era t.
 Boring mill, 48" Colburn, 2 heads.
 Boring mill, 10" Niles, 2 heads.
 Bulldozers, Nos. 2, 4, 6 and 30.
 Drills, radial, 5' Prentice, s. p. d.
 Flanging machine, McCabe pneumatic, capacity $\frac{1}{2}$ '.
 Forging machines, 2", 3", 4" and 5".
 Grinders, 12"x48" Cincinnati plain.
 Grinder, 10"x72" Norton pl., m. d.
 Grinder, Gisholt universal tool.
 Grinder, 36" Diamond wet tool.
 Grinder, 10x32" Ott universal.
 Grinder, No. 4 Gardner double disc.
 Lathes, 14"x6" Hendey, grd. hd., m. d.
 Lathe, 17"x12" LeBlond, g. h., t. a.
 Lathe, 19"x14" LeBlond, grd. hd.
 Lathe, 24"x26" American, q.c.g., m. d.
 Lathes, 30" and 27"x18" L. & S., q. c. g., m. d., t. a.

210-14 Penn Ave., Pittsburgh, Pa.

Lathe, 36"x20' Sidney, q. c. g., cone.
 Millers, horiz., Nos. 3 & 5 Cincinnati.
 Miller, No. 14-MP Garvin plain.
 Miller, vertical, No. 0 Bickett.
 Millers, vertical, No. 3 Brown & Sharpe, motor drive.
 Millers, Nos. 2, 5C & 6 Becker vert.
 Nut tappers, 10 spindle, rotary, cap. $\frac{1}{2}$ " nuts.
 Pipe machines, 12", 10", 8", 4" & 2".
 Planer, 36x36x12' Powell, 3 heads, like new.
 Planer, 30x30x8' Gray, 2 hds., 984.
 Planer, 30"x30"x8' Flather, 1 head.
 Press, No. 68 Bliss, double acting.
 Punch, 48" thrt., 1" thru 1", arch, jaw.
 Punch, dbl. end, 20" throats, $\frac{1}{2}$ "x1".
 Rolls, bending, 16"x $\frac{1}{2}$ " Wickes, m. d.
 Rolls, leveling, H. & J. 62", 11 rolls $\frac{5}{8}$ " diam.
 Shaper, Niles trav. hd., 26", 2 hds.
 Shear, angle, 6"x6" L. & A. dbl. m. d.
 Shears, guil., cap. 24" and 2" and 1".
 Shear, rotary bevel, cap. $\frac{1}{2}$ ", m. d.
 Shear, rotary, cap. $\frac{1}{2}$ ", with circ. att.
 Turret lathe, 18" Libby, like new.

SECOND-HAND MACHINERY

FOR SALE BY

A. F. Strafer. - - - - **30 Church St., New York City**

MODERN TOOLS FROM A U. S. SHIPPING BOARD PLANT

Boring mill, 53" Niles-Bement-Pond, latest type, rapid traverse, motor drive, automatic starter, dynamic braking.

Boring mill, 60" Niles-Bement-Pond, single pulley drive.

Milling machine, Ohio universal, 34"x12"x19", latest design, complete universal equipment, used 100 hours.

Radial drill, 4½" Morris, like new, tapping att., speed box, depth gauge.

Radial, 6" Baush, heavy type, latest, belt driven, new.

Radial, 6" Baush, belt drive, latest, slightly used.

Shaper, 25" Smith & Mills heavy back geared, used six months.

Turret lathe, 3½x36 Cincinnati Acme, grd, hd, complete, chuck equipment.

Each of the above tools will give service practically equal to new machines.

Satisfactory operation is guaranteed or money refunded.

BORING MILLS. VERTICAL AND HORIZONTAL.

72" Pond, belted motor drive.

24" Bullard, v. t. l., New Era.

3" & 4" bar Rochester, floor type.

51" Bullard, belt drive.

53" Niles-B.-P. rapid trav., d. c., m. d.

No. 2 Rochester, 3" bar, s. p. d.

60" Niles-B.-P., vertical, s. p. d.

No. 3 Universal horizontal, s. p. d.

12" Betts, geared feed, belt drive.

96" Bickford standard, belt drive.

61" Bullard New Era, v. t. l.

6" bar Niles horiz., knee type.

DRILLS, UPRIGHT AND RADIAL.

6" Baush, belt drive, new.

5" Baush, belt drive.

4½" Morris, latest type, s. p. d.

6" Niles-Bent-Pond universal.

4½" Dreses, motor drive.

No. 310 Baker, heavy duty.

28" Sibley, sliding head.

26" Barnes, sliding head.

GRINDERS

No. 16 Blanchard, motor drive.

Springfield Brandes, 12x48" surface.

No. 60 Heald cylinder.

10"x24" Landis, self contained.

10"x30" Webster & Perks univ.

No. 2 Brown & Sharpe, surface.

LATHES

50"x30' Pittsburgh, quick change.

27"x18" LeBlond, heavy.

18"x8" Morris.

44"x24" Niles-P.-B., t. g., belt drive.

38"x34" Pond, 2 carriages.

20"x8" American, quick change.

TURRET LATHES.

3½"x36" Cin'ti Acme flat, modern,

geared head, chuck equipment.

24" Gisholt, 64" hole thru spindle.

28"x24" J. & L., bar equipment.

21" Gisholt, 2-step cone, modern.

24x26" Greenlee, chuck equipment.

MILLING MACHINES.

No. 4 Cincinnati plain horiz., h. p.

No. 4 Cincinnati h. power vertical.

No. 3 Brown & Sharpe, pl. cone type.

No. 3 Cincinnati vert., high power.

No. 4 Cincinnati h. p. univ.

No. 2 Cincinnati h. p. univ.

30"x14" Ingersoll, 4 heads.

36"x12" Ingersoll, 2 heads.

PLANERS.

150"x25', 4 heads, stand, belt drive.

120"x25" Sellers, motor drive.

60"x60"x16" Gray, 4 heads.

54"x54"x16" Sellers, 4 heads.

48"x48"x14" Patch, 4 heads.

42"x42"x10" Cleveld open s., 3 hds.

36"x36"x8" Sellers, 4 heads, belt dr.

28"x28"x10" American, 1 head, b. d.

PIPE MACHINES AND BOLT CUTTERS.

4" Saunders, belt drive.

Little Giant No. 732, 1" capacity.

1½" National bolt cutter.

2½" to 10" Curtis & Curtis.

Jarecki 2½", a. c. motor drive.

1" Landis, single lead screw.

12" Jarecki No. 18, belt drive.

8" Saunders pipe machine.

PUNCHES AND SHEARS.

No. 6 Quickwork rotary.

No. 4 H. & J. double, 48", t. a., c. m.

No. 2 H. & J. double angle.

Lenox rotary bevel, 8" capacity.

No. 6 H. & J. 60" thrt., a. c. motor.

Buffalo armor pl. "U" 25 comb.

No. 5 H. & J. 48" t., a. c. motor.

No. 4-A Quickwork, motor drive.

Morgan & W. gate shear, 9", 8" cap.

Pels type beam shear, 6" to 24" cap.

Badger State 9C., 24" t., 4" d. e.

Long & Allstatter No. 5, 24" t., s. e.

SHAPERS.

24" Potter & Johnston universal.

24" Cincinnati, b. g.

SECOND-HAND MACHINERY

A. F. Strafer—Continued.

MISCELLANEOUS PLANT EQUIPMENT.

Air drills, Thor, \$20. to \$50.
 Air hammers, 2" & 6", \$15.
 Brake, tinsmith's, 98".
 Gas engine, 15 h. p. Novo 2 c., new.
 Hammer, 3000 lb. Bell single frame.
 Hammer, 3000 lb. Bell double leg.
 Hammer, 600 lb. Erie, forging.
 Header, Ajax 14", all steel.

Jointer, 12" American.
 Rolls, 1"–20" Niles-B.-P., a. c. mtrs.
 Roll, Sellers, 1" cap., 7", drop end.
 Roll, 10' Southwark, 1" cap.
 Saw, No. 6 Nutter & B., a. c. motor.
 Saw table, universal, American.
 Surfacer, single, 30" American.
 Tapping attach., 1" Errington.

FOR SALE BY

The Strong, Carlisle & Hammond Co., Cleveland, O., Detroit, Mich.

ENGINE LATHES.

12"x 8' Hendey, c. r., q. c. g., with pan bed (4).
 12"x 8' Seneca Falls, c. r. and t. a., with relieving att.
 14"x 6' LeBlond, l. c. g. and chuck.
 14"x 6' Hamilton.
 14"x 6' Monarch, c. r., standard.
 14"x 6' Prentice Bros., s. b. g., l. c.

TURRET LATHES AND

No. 2-A W. & S. g. h. tur. lathes.
 No. 3-A W. & S. g. h. turret lathe.
 14" Acme screw mch., p. f. to tur.
 26" Gisholt heavy duty turret lathe.
 2"x24' Jones & L. g. h. flat turret.
 No. 00 Brown & Sharpe auto., (8).
 No. 0 Brown & Sharpe auto., (2).
 No. 2 Brown & Sharpe auto., (2).
 No. 2 Warner & S. p. h. screw mch., a. c. & b. f., p. f. to turret, (3).
 1" Biggs, p. h., a. c. & b. f.

DRILLING

20" W.F. & John Barnes, stationary head, b. g. and p. f. (2).
 24" Baker heavy duty.
 4-spindle Leland-Gifford, h. s., b. b., with p. f. to each spindle.
 6' arm Western radial, with tap. att., arranged for motor drive.
 20" Superior, stationary hd., p. l. f.

MILLING

No. 0 Bickett, hand, bench type (7).
 Toledo hand milling machines (2).
 No. 2½ K. & T. vertical, arranged for motor drive.
 No. 2-B B. & S. plain, constant s. dr.

GRINDERS.

No. 10 B. & S. plain, (2).
 No. 6-A Bryant internal.
 No. 2 B. & S. surface.
 LaSalle combination pl. and surface.

SHAPERS AND

15" Flather crank shaper.
METAL CUTTING TOOLS

Higley cold saw.
 3" new Davis cutting-off machine.

GEAR CUTTERS

26" & 36" No. 3 Brown & S. auto.
 No. 13 Brown & Sharpe auto.

HAMMERS.

Quickwork body hammer.

SCREW MACHINES.

No. 4 W. & S., p. h., a. c. & b. f.
 No. 2 W. & S., p. h., a. c. and b. f. (4).
 No. 2 W. & S., p. h., a. c. and b. f., with p. f. to turret (5).
 No. 4 W. & S., g. f. h., a. c. and b. f. (4).
 No. 4 W. & S., g. f. h., a. c. and b. f., with p. f. to turret (3).
 18" Libby, factory rebuilt.
 No. 2-G B. & S. automatics (3).
 No. 2 B. & S. turret forming (2).

MACHINES.

20" W. F. & John Barnes, stationary head, p. l. f., (2).
 20" Hamilton, w. and l.
 12" Mechanics, friction driven.
 6-sp. 12" Leland-G., h. s., b. b. (6).
 12" 3-sp. Leland-G., h. s., b. b. (4).
 14" 3-sp. Leland-G., h. s., b. b. (3).
 14" 4-sp. Leland-G., h. s., b. b. (3).

MACHINES.

No. 1½ Cincinnati old style univ.
 No. 1½ Rockford plain, with div. hd.
 No. 24 Ohio plain b. g. complete.
 No. 1-Y Brown & Sharpe plain.

PLANERS.

No. 1 Le Blond cutter grinder.
 Type "DE" Hissey-Wolf internal.
 No. 11 B. & S. plain grinders, (5).
 Plain emery wh'l stand with column.
AND PLANERS.
 22"x22" 5 Putnam planers (2).
AND SQUARING SHEARS.
 30" Niagara foot power squar. shear.

AND HOBBERS.

No. 12 Barber-Colman hobbers.
 No. 12 B. & S., bevel, (2).

SECOND-HAND MACHINERY

FOR SALE BY

D. M. Osborne Machinery Co.,

P. O. Box 853, Station "H" Cleveland, Ohio

AUTOCALL SYSTEM.

Model 16, 60-station Autocall System arranged for 110 volts, d. c., complete with 1660-D central station, relay, 23—4" gongs, 16—6" gongs, 11—8" gongs, and one whistle; all in first class condition; approximate new cost \$1000.00; will sell for less than half cost.

FOR SALE BY

J. L. Lucas & Son, Inc., 3 Fox Street, Bridgeport, Conn.

Lucas List of Rebuilt Machinery.

BORING MILLS.

24"	Bullard rapid production vertical lathes, (4), each	\$1650.
36"	Bullard two-head vertical boring mill	850.
42"	Bullard vertical boring mill, single head	950.
30"	Bullard vertical boring mills, turret heads, (2), each	500.
No. 1 Barnes horizontal boring mill		450.
No. 1 Rockford boring mill		475.
No. 1 Beaman & Smith boring mill		400.
Bissell horizontal boring mill, table 30x40		1250.

DIE SINKERS.

Keller automatic die sinkers, type E3, (3), price each	\$ 650.
No. 2 Pratt & Whitney, square base, (2), each	600.
No. 4 Thurston die miller	150.

DRILLING MACHINES.

24" Snyder	\$ 300.	No. 13 Pratt & Whitney 12 and	
24" Prentice	250.	20 spindles, (2), each	\$ 750.
24" G. & E. two-spindle	250.	Weston 12-spindle	325.
42" Prentice	400.	No. 22 Natco	800.
Natco semi-auto, 6-sp, horiz.	450.	No. 37 Natco	850.
21" Rockford 4-spindle gang,	600.	No. 25 Natco	475.
(4), each		No. 16 Natco	900.

RADIAL DRILLS.

3' Fosdick radial	\$ 575.	1 3' Carleton radials, (2), each.	\$ 375.
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FURNACES.

No. 7 American gas lead hardening furnace		\$ 75.
No. 5 American gas oven furnaces (We have two of these) each		150.
Billow oven furnaces, muffle type, (6), each		125.

GRINDERS.

20" Diamond wet grinder		\$ 60.
14" Pratt & Whitney vertical, with rotary		950.
No. 2 Brown & Sharpe and Reid, with magnetic chucks, each		375.
Production hand surface grinders, (5), each		100.
No. 1 Brown & Sharpe full universal, 90% complete		500.
No. 2 Brown & Sharpe universal grinder		800.
Wilmarth & Mormon grinder, with magnetic chuck		375.

CYLINDRICAL GRINDERS.

10x50 Norton	\$ 575.	12x24 Modern self-contained,
10x80 Norton	1250.	(2), each
No. 11 Brown & Sharpe plain	450.	\$ 675.

DISC GRINDERS.

No. 6 Besly, adjustable discs	\$ 400.	No. 6 Diamond, single disc,
No. 10 Besly, double end	150.	(3), each
No. 14 Gardner plain disc	425.	\$ 75.

GRINDERS—MISCELLANEOUS.

No. 60 Heald cylinder, rebuilt		No. 162 Wells bench cutter &
(7), each	\$ 900.	reamer
No. 12 Cincinnati tool & cutter	375.	\$ 65.
No. 34 Van Norman internal	300.	No. 1 Landis internal, (4), ea...
No. 8 Bryant chucking grinder	250.	600.
		No. 70 Heald internal, (2), ea...
		700.
		No. 1 Bridgeport
		125.

SECOND-HAND MACHINERY

FOR SALE BY

Marr-Galbreath Machinery Co.,

Angle & bar bender, No. 9 Buffalo.
 Bender & straightener, No. 4 H. & J.
 Holt cutters, Acme 6", Landis 24".
 Holt cutter, 2" Acme, sgl. 24" head.
 Holt cutter, 2" Acme, dbl. Landis hd.
 Holt cutter, 14" Acme, triple head.
 Boring mills, Rockford, 2" & 3" bar.
 Boring mill, No. 21 Lucas hor., 3" bar.
 Boring mill, vertical, 72" Betts.
 Boring mill, 40" sgl. hd., light \$175.
 Boring mill, vertical 84", 2 heads,
 220 v., d. c. motor.
 Brake or press, 10' Robinson, toggle.
 Bulldozers, Nos. 24, 6 & 30 W.-W.
 Compressor, Curtis 2½x3".
 Compressor, 4½x4" Curtis.
 Compressor, 7"x6" Ind. Rand.
 Compressor, 8"x8", belted, tank.
 Compressor, 12"x14" Chicago, 275
 cu. ft., belt.
 Compressor, 14"x10"x12", Ingersoll.
 Compressor, 1300, 888, 589 cu. ft., m.d.
 Drills, radial, 3" Bickford, t. a.
 Drills, radial, 3" Prentice, 3" Fosdick.
 Drill, radial, 30" Hamilton, t. a.
 Drills, radial, 5" Baush, \$500.
 Drills, 36" Hoefer, 24" Aurora, s. h.
 Drill, 13" Washburn sensitive.
 Drills, 21 and 20" Barnes, hand and
 lever feed.
 Drill, 28" Barnes, sliding hd., b. g.
 Drill, 20" Rockford, sl. hd., q. c. g.
 Drill, 22" American, hand & lever fd.
 Drills, 22" Aurora upright (2).
 Drills, No. 2 Colburn, mfg. type, (4).
 Drill, Allen, 20" sensitive, 4-spnd.
 Drill, heavy duty, 24" Foote-Burt.
 Exhausters, No. 8 Buffalo.
 Fan, ventilating, Amer., 47" wheel.
 Forging machines, 1½, 2, 2½ & 3".
 Gear hobber, No. 12 Barber-Colman.
 Grinder, No. 60 Heald internal.
 Grinder, Gardner, 16" disc & ring w.
 Grinder, Diamond dbl. end, 14" wh.
 Grinder, No. 1 Besley 12" disc, swing
 and angle table.
 Grinder, disc, No. 10 Besley, 18" wh.
 Hack saw, Racine high sp., 6x6".
 Hack saw, No. 5 Marvel, cap. 6x6".
 Hammer, 40 lb. Yeakley, belted.
 Hammers, 80, 100 & 125 lb. Bradley.
 Hammer, st. drop., 1500 lb. Erie, new.
 Hot saw & burring machine, Acme.
 Keyseater, No. 1 Davis, cap. 1" key.
 Lathe, gap, 36/60"x12/20" Harrington.
 Lathe, 42"x32" Am., grd. hd., m. d.
 Lathe, 36"x18" American, g. h., t. a.,
 for constant speed m. d.
 Lathe, 32"x14" Draper, 28" h. s.
 Lathe, 30"x14" L. & S., q. c. g., t. a.
 Lathe, 26"x14", Niles-Bement-Pond,
 q. c. g., h. s.
 Lathes, 27"x10' Lodge & S., q. c. g.

We Buy, Sell and Exchange.

58 Water St., Pittsburgh, Pa.

Lathe, 18"x10' Porter, s. b. g., c. r.
 Lathe, 18"x8½" Hendey, pl. change.
 Lathes, 18"x10' L. & S. & LeBlond.
 Lathe, 18"x8" Am., q. c. g., tap. att.
 Lathe, 16"x8" Bradford, pl. change.
 Lathe, 14"x6" Monarch, q. c. g., t. a.
 Lathe, speed, 11"x4" Prentiss, t-rest.
 Miller, bench, No. 1 Burke, hand.
 Miller, No. 3 Fox, hand, 24"x6"x14".
 Miller, No. 0½ Cin. pl., 18"x6"x15".
 Miller, No. 3 H LeBlond, pl. ind. hd.
 Miller, No. 2 Kempsmith universal.
 Miller, vertical, No. 5-C Becker,
 rotary table.
 Miller, vertical, No. 4, Becker,
 rotary table.
 Miller, vertical, No. 2½ Becker,
 motor drive.
 Miller, Hendey Lincoln with count.
 Miller, Knight duplex,tbl. 8½"x32".
 Nut tapper, 1" Acme 6-sp. semi-auto.
 Pipe mch's, 4" Oster, belt drive.
 Pipe machine, 8" Saunders.
 Planer, 60x60"x12' Pond, 3 hds., m.d.
 Planer, 42"x42"x12" Betts, 1 head.
 Planer, 42"x36"x20' Cin'ti, 4 heads.
 Planer, 30"x30"x 8" Niles, hy., 1 hd.
 Planer, 26"x26"x8" Niles, 1 head.
 Planer, 24"x24"x6" Gale, 1 head.
 Planer, 24"x24"x 5" New H., 1 hd.
 Press, No. 27 Bliss, horning, b. g.
 Press, No. 56 Toledo, pl. trim., 3" str.
 Press, No. 11 Perkins, pl. trim., 4" str.
 Press, No. 82 Consolidated horning,
 1000 lb.
 Press, C-5 Ferracute, o. b. i., plain.
 Press, 83 Bliss, 10" stroke, geared.
 Press, 65-N Bliss (cam), plain.
 Press, tie rod, S. S., dbl. cr., 37" bet.
 hsgs., 2" str. 14000 lb., belt or mtr.
 Punch, Cleveland 7" tht. cap. 1" x 8".
 Punch, 15" thts., dbl., 4½", arch. jaws.
 Punch & shear, H. & J., 72" tht.,
 cap. 12" x 1½", motor drive.
 Riveter, 3" Shuster, style A.
 Rivet hammers, 3-A, 4-A, 5-A, hi. sp.
 Rivet spinner, 3/16" Grant rotary.
 Rolls, bending, 20"x8" H. & J., d. e.,
 m. d.
 Saw, No. 11½ Higley, cap. 4" blade.
 Saw, Gorton, size 2B internal tooth.
 Screw machines, No. 1 Warner & S.
 Shaper, 15" Kelly, sgl. grd. crank.
 Shaper, 21" American, b. g., crank.
 Shaper, 28" Hendey, pillar type.
 Shears, Quickwork No. 6, m. d.
 Shear, rotary, 1" Lennox, 8" gap.
 Shear, splitting, No. 26 Beloit, cap.
 4", m. d.
 Shear, squaring, 42" Niagara, ft. p/w.
 Slotters, 16" & 18" Bement-Miles.
 Testing mch's., 100,000, 200,000 lbs.
 Turret lathe, No. 1 Bardons & Oliver.

SECOND-HAND MACHINERY

FOR SALE BY

Syracuse Supply Company. **314 W. Fayette St., Syracuse, N. Y.**

Guaranteed New Machines in original crates at prices below list:

Crucible, FD-104 Hoskins.
Drills, 21" Canedy-Otto (2).
Drills, 20" Buffalo (4).
Grinder, Churchill internal.
Lathe, 14"x6' Hamilton.
Lathe, 16"x8' Hamilton.
Lathe, 10"x5' Monarch.
Lathe, 14"x6' Monarch.
Lathe, 14"x8' Monarch.

Automatic screw mch., No. 52 Acme.
Automatic screw mch., No. 515 Acme.
Drill press, 25" W. F. & John Barnes.
Drill press, 26" Barnes, sliding hd.
Drill press, 4-spindle Reed sensitive.
Drill press, 3-spindle Reed sensitive.
Drill press, 2-spindle Reed sensitive.
Grinder, No. 6 Wilmarth & Morman.
Lathes, 14"x 6' American (2).
Lathe, 14"x 6' Monarch.
Lathe, 16"x 6' Hendey, rebuilt.
Lathe, 16"x 8' American, geared
head, rebuilt.
Lathe, 16"x 8' Monarch.
Lathe, 18"x10' American.

Lathe, 16"x6' Monarch.
Miller, 42" type "B" Briggs.
Pipe machine, No. 70 Forbes.
Screw mchs., No. 4 W. & S., g.f.h., (3).
Slotted, No. 3 Rhodes.
Straightener, No. 24 Corey.
Tilted turret, No. 4 Wood.
Turret lathe, No. 4 W. & S. univ.

Exceptional values in Used Tools:

Lathe, 28"x12' Draper.
Miller, No. 5 Becker vertical.
Press, No. 69N Bliss.
Punch press, No. 18 Bliss.
Radial, 4" Cin'ti-Bickford, GB-BD.
Shaper, 16" Gould & Eberhardt.
Thread miller, Lees-Bradner.
Tilted turret, No. 6 Wood.
Turret lathes, No. 4 Foster (2).
Turret lathe, No. 2 Warner & S.,
hollow hex.
Turret lathe, 2x26 Pratt & Whitney.
Turret lathe, No. 24 s. g. Garvin.
Turret lathes, 3x36 Jones & L. (3).
Turret lathe, 2x24 Jones & Lamson.

FOR SALE BY

Fitzsimmons & Cole Machinery Company

Pittsburgh, Pa.

1208 House Building,

Air compressor, 10"x12", 164 cu. ft.
Bending roll, angle, 4"x4"x $\frac{1}{2}$ "
Bending rolls, W. & R. 12"x7/16"
Bending rolls, No. 5 H. & J. 12"x $\frac{1}{2}$ "
Bending rolls, 6"x $\frac{1}{2}$ "
Bolt cutters, 14" to 4" Landia.
Borer, car wheel, 48" Pond.
Boring mill, 30" Bullard turret.
Boring mill, 36" Niles.
Boring mill, 42" King, m. d.
Boring mill, 52" King, m. d.
Boring mill, 60" Betts, 2 hds., m. d.
Boring mill, 84" Bullard.
Boring mill, 144" Pond, 2 heads.
Drill press, 20" Barnes Camel Bk.
Drill presses, 24" to 36".
Drill press, No. 25 Foote-Burt.
Drill press, 1 D Colburn.
Drill, radial, 3" Cincinnati-Bickford.
Drill, radial, 4" Prentice.
Drill, radial, 5" Reed-Prentice, s.p.d.
Engine oil, 50 h. p. International.
Flanger, McCabe, $\frac{1}{2}$ capacity.
Grinder, Landis crankshaft, 16"x48".
Grinder, Landis crankshaft, 16"x68".
Grinder, Landis plain, 12"x52".
Hammer, 200 lb. Bradley upright
helve.
Hammers, 600 lb. to 6000 lb.
Hammer, 800 lb. Merrill board drop.
Lathe, 16"x 6' South Bend.
Lathe, 27"x10' Lodge & S., q. c. g.

Lathe, 50"x34" Pittsburgh.
Lathe, axle, No. 3 Niles.
Miller, No. 3-A Garvin plain.
Miller, Ingersoll slab, 84", drum type.
Pipe machines, 2" to 12".
Planers, 30" to 12".
Planer, rotary, 48" Newton.
Planer, plate, Cleveland 23"x1".
Press, No. 20 Bliss, o. b. i., 2" str.
Press, No. 37 Swain, o. b. i., 3" str.
Press, No. 37 $\frac{1}{2}$ Bliss straight side,
6" stroke.
Punch & shear, Cinti, 1" thru 1 $\frac{1}{2}$ ".
Punch & shear, No. "A" L. & A., 2"
thru 1 $\frac{1}{2}$ ".
Punch & shr., H. & J., 1 $\frac{1}{2}$ " thru 1 $\frac{1}{2}$ ".
Punch, hor., Cleveland, 1" thru 1 $\frac{1}{2}$ ".
Riveter, 70-ton Hanna, 18" reach.
Sand blast, MacLeod, 36"x36".
Saw, 18" Higley, cold.
Shaper, 24" Gould & E., bk. grd.
Shear, angle, 8"x8"x14" L & A.
Shear, guillotine, 24" United.
Shear, plate, 9"x8" Morgan.
Straightener, 30" Waterbury-F. 4".
Testing machine, 100,000 lb. Olsen.
Turret lathe, No. 2-A Warner & S.
Turret lathe, No. 3-A Warner & S.
44" h. s.
Turret lathe, No. 4 W. & S. univ.
Turret lathe, 24"x6" Gisholt.
Welder, butt, Thompson, cap. 14" rd.

SECOND-HAND MACHINERY

FOR SALE BY

Chas. Molitor Machinery Co., 118-124 S. Clinton St., Chicago, Ill.

LATHES.

- 36" x 14' American, q. c. g.
- 33" x 10' LeBlond, q. c. g., hvy.
- 30" x 14' LeBlond, q. c. g., heavy.
- 24" x 16' LeBlond, plain.
- 24" x 12' Reed Prentiss, geared head.
- 26" x 10' Niles, q. c. g.
- 24" x 12' South Bend, taper att.
- 24" x 10' Lodge & Shipley, grd. hd.
- 18" x 8' Greaves Klusman, q.c.g., (2).
- 18" x 8' Sidney, q. c. g.

- 18" x 8' Hendey, taper, draw-c. att.
- 16" x 6' Hendey, taper attach.
- 16" x 8' Pratt & Whitney, q. c. g., taper, relieving attachment.
- 16" x 6' Bradford, q. c. g.
- 13" x 11' Sebastian.
- 12" x 5' Pratt-W., taper draw collets.
- 10" x 4' Seneca Falls, taper attach.
- 10 Cataract, Pratt & Whitney, Rivett, Elgin bench lathes.

MILLERS.

- 24" & 34" Bullard.
- No. 3 LeBlond universal.
- Nos. 1 & 2 Kempsmith universal.
- No. 1 Kempsmith plain, with vertical attachment.
- National Transit Co. plain.

RADIALS AND DRILL PRESSES.

- 36" American.
- 36" Mueller Tool Co.
- 30" Dresen, Mueller.
- 24", 26" Prentiss, Cincinnati, etc.
- 2, 3 spdl. 24" Avey's, 1" cap. (3).

- No. 3 LeBlond plain.
- No. 3 Becker vertical.
- No. 4H Becker vertical (2).
- Gooley & Edlund, production.
- 24" Twin spline miller, P. & W. Bristol, Whitney, U.S. hand.

- DRILL PRESSES.
- 4 spdl. Gooley & Edlund, 1" cap.
- 1, 2, 4, 6 sp. Allen, Avey's, 1" cap. (8).
- 1, 2, 4 spindle Leland Gifford, 1" cap.
- 2, 4 spdl. Leland Gifford, 1" cap.
- Large variety 14", 16", 20" drills.

GRINDERS.

- Nos. 2 & 3 Brown & Sharpe univ.
- No. 3 B. & S. universal.
- No. 1 B. & S. cylindrical.
- No. 2 Wilmarth & Norman surface.
- No. 11 Brown & Sharpe.

- Nos. 2 & 3 La Salle.
- Fitchburg, Landis, Greenfield.
- 18", 26", 40" disc, Gardner, Besly.
- No. 23 Brown & Sharpe cylinder.
- Nos. 60 & 68 Heald cylinder.

SHAPERS AND BOLT CUTTERS.

- 18" Gould & Eberhardt.
- 20" Milwaukee.
- 18" Hollingworth.
- 17" Smith & Mills.
- 1" Landis bolt cutter.

- 1" Landis bolt cutter, 2-sp.
- 2" National Acme.
- 1" and 1½" Geometric.
- 4" Merrill pipe machine.
- 4"-12" Pipe threader.

SCREW MACHINES AND TURRET LATHES.

- Jones & Lamson dbl., sgl. spindle.
- Nos. 0, 1, 2 B. & S. semi-auto.
- No. 6 Foster, power long. & cross fd.
- Nos. 0, 1, 2, 3 Foster, Bardons & Oliver, Garvin, W. S., P. & W.

- 1" & 1½" cap. Acme, b. g., frict. h.
- 2", 1½", 2", 2½" Cleveland auto.
- Nos. 0 & 00 B. & S. automatics.
- 1" Gridley 4-sp. automatic.

PUNCH PRESSES AND SHEARS.

- No. 6 Bliss, Stiles pattern.
- No. 5 Niagara inclinable.
- No. 4 Niagara inclinable.
- No. 3 Long & Allstatter inclinable.
- No. 3 American inclinable.
- No. 3 Loshbough-Jordan (2).
- No. 2 Loshbough.

- 26" Bliss arch presses.
- 32" Stoll arch presses.
- No. 3 Black & Johnson.
- 10" power squ. shear, 18 ga.
- 62" all steel power squ. shear, 10 ga.
- 52" Niagara power squ. shear, 1" ga.
- 39" Niagara pwr. sq. shr., 3/16" ga.

GEAR CUTTERS.

- 26" No. 3 Brown & Sharpe.
- Waltham automatic, (4).

- No. 1 & No. 1½ automatic, (4).
- No. 10 Bilton gear hobbers, (4).

MISCELLANEOUS.

- Beaders, power.
- Corrugating machine, steel, 7"x36", rollers 4"x10".
- Hammer, 60 lb. Bradley.
- Drill & lathe chucks, Stromberg periodograph, time clocks, time stamps, etc.

- Rivet spinners, Grant.
- Shears, circle and slitting.
- Spot welders, Toledo and Thomson.
- Tapping machines, all sizes.

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SECOND-HAND MACHINERY

FOR SALE BY

Bennett Machinery Co.,

Boring mill, 51" Bridgeport, 2 hds.
Grinder, univ. cutter and reamer,
Draper & Hall.
Lathe, 18"x 8' Mueller, q. c. g., t. a.
Lathe, 24"x12' Johnson, geared hd.,
q. c., t. a.

30 Church St., New York City

Lathe, 24"x14' Schumacher & Boye.
Pipe machine, 8" E. C. & B.
Pipe machine, 3" Jarecki No. 7B.
Planer, 54"x12' Pond, 4 heads.
Planer, plate, 18' Niles.
Shaper, 20" Walcott heavy duty, 95%.

FOR SALE BY

Tuber, Velick & Co., Inc., - - 628-630 W. Lake St., Chicago, Ill.

Telephones: Monroe 4199-6813. No Branches

PUNCH PRESSES.

No. 3 Walsh.
No. 4 American Can.
No. 7 Beatty, cap. 14" in 1".
No. 15 Torrig Wold.
Perkins punch presses, 4" str. (20).
DRILL PRESSES.
14" Excelsior.
20" b. g. p. f., new, \$130.
20" & 28" Weigel.
26" Hoefer.

Nos. 13 & 15 single end punches.
Long & Allstatter horn punch, capacity 14x1.
No. 17 Williams-White double end punch & shear.

MILLING MACHINES.

No. 2 Le Blond.
No. 2 Cincinnati vertical.
No. 2 Cincinnati universal.
11"x 5' Sterling.
15"x 8' Sidney, q. c.
16"x 6' Sidney, q. c., (2).
16"x 6' Monarch q. c.
18"x 8' Canedy-Otto.
18"x 6' Hendey, q. c., taper att.
18"x 8' South Bend, q. c.
17"x 8' Sidney, q. c.

No. 3 Kempsmith.
A number of hand millers.

LATHES.

24"x24"x6' Pond.
24"x24"x 8' Putnam.

18"x 8' Chard.
18"x10' Sidney, q. c., (2).
20"x 8' Lodge & Shipley, geared head, s. p. drive.
24"x10' Canadian, q. c., d. b. g., (3).
25"x10' Sidney.
Dalton Six.

PLANERS.

16" Smith & Mills.
16" Ohio.
16" Whipp, b. g.

30"x30"x 8' Fitchburg.
36"x36"x 7' Flather 2 heads.

SHAPERS.

Millholland.

24" Rockford.
24" Kelly.

SCREW MACHINES.

No. 2 Manhattan surface.
Gardner No. 2 & No. 6 disc grinders.
No. 14 Besly, disc.

No. 2 Smith, hand.
10x36 Thompson, new.
Emery grinders, #2 and up.

GRINDERS.

WOOD-WORKING MACHINERY.
Band saws, 36" Famous, new, (10).
Horing mills, Andrew, (3).
Glue jointer, Falls.
Jointers, 4" D. C. Walcott.

Planer, 30" Berlin.
Saw table and jointer combined, portable.
Swing saws, Porter, (4).

MISCELLANEOUS.

Buffers, U. S. and Westinghouse,
5 h. p., b. b.
Cold saw, No. 20 Lea-Simplex.
Hack saws.
Keyseaters, Davis.
Lift trucks, Barrett, 1 ton cap.
Motors, a. c. and d. c.

Paper cutter, Chandler & Price.
Punch & shear, No. C Cleveland.
Radial drill, 34" Canedy-Otto.
Radial drill, 34" Cin'ti Bickford.
Time clocks, International.
Turret lathe, Gisholt.
Woodworking machines.

Leather belting. Pulleys, shafting and hangers.

SECOND-HAND MACHINERY

FOR SALE BY

McDonald Machinery Co., 1531-33 N. Broadway, St. Louis, Mo.

Cut-off mch., Modern 1", Davis 6".
 Drill, Detroit 5-sp. horiz.
 Drill, Rockford horiz. boring & drill.
 Drills, 4-sp. 24" gang, 1, 2, 3 and 6
 spindle, h. s. b. b.
 Drills, 5' Americ, 3' C.-O. rad.
 Drill, radial, 2-3' American, q. c.
 Furnace, Holcroft Electric annealing, 92 k. w.
 Gear shaper, 36" Fellows.
 Grinder, Persons-Arter automatic
 surfacing.
 Grinders, 25 Heald piston ring.
 Grinder, Landis 10x36.
 Grinder, Landis 12x48. Fitchburg cyl.
 Lathes, Hamilton 27x14, Sidney 27x10,
 Bridgeford 27x9. Advance 18x8, q. c.
 Lathe, Star 14x6, mtr. drive, collets.

Milling machines, Hendey No. 2G
 universal, Ohio No. 20.
 Milling mch., Becker "SD" vert.,
 rotary table, 17800 lbs.
 Milling mch., LeBlond No. 4 plain.
 Planers, 36"x36"x23" Sellers, 2 heads;
 42"x42"x16" Pond, 2 heads.
 Presses, Ferracute No. 2 str. bck.,
 Swaine No. 40 arch.
 Punches, H. & J. No. 0, 14" thrt.,
 4" in 4"; Felber 1" in 1" punch &
 slit shr.; Scully 20" thrt., 1" in 1".
 Shapers, 28" automatic open side,
 16" Milwaukee, 7" Rhodes.
 Shears, 60" thrt. rotary slitting (2).
 Thread miller, Lees-Bradner No. 4.
 Welder, Spot-W., Toledo, 20 k. w.
 Welder, Butt-Nat'l, Federal, 8" rds.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co., 1211-1223 N. 12th St., St. Louis, Mo.

No. 2 Kempsmith.
 No. 2 Brown & Sharpe plain.
 No. 4 Cincinnati plain, single pulley.
 No. 5-B Brown & Sharpe.
 No. 33 Kempsmith.

3' arm Mueller, radial, s. b. drive.
 5' arm Prentice radial.
 3½' arm post drill.
 No. 2 Cincinnati universal.
 8" Heald rotary, with magnetic ck.
 10"x36" Thompson universal.
 No. 6 St. Louis.
 24"x24"x 6' Lodge & Davis.
 32"x30"x 7' Whitcomb.

Smith & Mills, all sizes.
 15" Hendey, arranged for motor.
 20" Kelly.

9"x12" Sundstrand.
 14"x 6" Monarch, q. c.
 14"x 6' Sidney, q. c.
 20"x 9" Cisco, q. c.
 21"x 8" Sidney, q. c.
 24"x12" Advance.
 26"x13" Putnam, q. c., ar. for motor.

Boring machine, horizontal, No. 2
 Pawling & Harnischfeger.
 Boring mill, No. 1 Hinsse horiz.
 Broacher, No. 1 LaPointe.
 Bulldozer, 75-ton Lourie hydraulic.
 Engines, Corliss, 75 to 200 h. p.
 Magnetic pulley, 24"x26".
 Press, portable, hydraulic.
 Punch, No. 14 Williams-White, dbl.

MILLERS.

No. 2 Rockford full universal.
 No. 2 Knight vertical.
 Nos. 0 and 3 Burke bench.
 Whitney hand miller.

DRILLING MACHINES.

34" sliding head.
 24" Aurora, sliding head.
 20" Barnes.

GRINDERS.

30"x84" Diamond face grinder.
 12"x42" Landis universal.
 Yankee twist drill.

PLANERS.

36"x36"x10' Flather.
 60" open-side Detrick & H., 3 heads.

SHAPERS.

16" Flather, 4 speeds.
 16" Cincinnati.

LATHES.

26"x16' Niles, plain change.
 28"x 8' Greaves & Klusman, q. c.
 30"x15' American, q. c.
 33"x20' Draper, triple geared.
 36"x18' Prentice Bros., t. a.
 20" Pit lathe.

MISCELLANEOUS.

Punch, No. 5 Long & Allst., 5" thrt.
 Punch, No. 7 Long & Allst., 4" thrt.
 Riveter, 24" Shepard.
 Screw machine, No. 6 Woods.
 Sheet metal cutter, No. 1 Gray.
 Shear, squaring, 10' Ohl, 3/16 cap.
 Tilted turret lathes, Wood, (3).
 Turret, 28" Gisholt, latest.

SECOND-HAND MACHINERY

FOR SALE BY

D. E. Rowlingson,	Box 265, Utica, N. Y.
Drills, Burke bench 10" & 12"; drill press 20", new.	
Hack saw, small, good as new.	
Lathe, 18"x8' Hendey, good as new, 3 chucks.	\$250.
Punch press, gear driven, on wood stand.	10.

FOR SALE BY

A. M. Stoehr Machinery Co.,

Blue printing and drying machine.
Bolt cutter, 3-spdl. Acme, 1" cap.
Boring mills, 42" Baush, 34" & 60"
Niles, all have 2 heads, and others.
Compressors; 6x14" Gardner, motor
drive; 3x4" Ingersoll-Rand, belt dr.
Drill presses, 2 & 4 spindle Henry
& Wright; 4-spindle Barnes, b. g.,
p. f., 18", and others.
Gear hobbers, cutters: 12" Cincinnati;
48" & 60" Gould & E., 38" Fellows
gear shaper, and others.
Grinders, Heald piston ring (4);
No. 3 LaSalle plain and surface;
3x18" Norton, and others.
Hammer, 500 lb. Beaudry, & others.
Lathes, 22" to 44" McCabe; 14x6
Rockford, q. c. g., late type; 18x8
Barnes, heavy duty; 15" & 24 spin-
ning, and others to 60".
Oil extractors, centrifugal, (8).
Pipe machines, 2" & 6" Jarecki.

560 W. Adams St., Chicago, Ill.

Milling mchs., No. 25 Becker plain;
No. 0 Bristol hand; No. 0 Rockford
plain; No. 2 Van Norman duplex;
No. 3 Thurston dieing, and others.
Punch & shears, No. 4 L. & A., d. e.,
4" thru 4"; No. 14 W., d. e., 15"
throat, and others.
Punch presses, No. 16 Bliss horning:
Nos. 18, 19 and 20 Bliss; No. 128
Ams; No. 10 Torris Wold, o. b. i.;
Nos. 48 & 50 Crosby; No. 69 Stoll
s. s.; No. 1 L. & A., 8" cap., will
punch 14" thru 1", and others.
Riveters, No. 5-A High Speed.
Saws, 9x9 Sterling high speed; 12x12
Racine high speed, and others.
Screw machines, Nos. 2 & 3 Foster
(12); Nos. 52 & 53 Acme, others
plain and automatic.
Shears, Pittsburgh alligator, 1".
Welders, both spot and butt.
Wire strait'g mch., 3/16" Shuster.

FOR SALE BY

Brown Machinery Co., . . . 2323 N. 9th St., St. Louis, Mo.

Boring, drilling & milling machine, No. 10 Beaman-Smith Co. horiz., 34" bar, splendid condition. Price.....	\$1500.
Die sinking machine, No. 5 Jackson. Price.....	500.
Drill & tapper, Barnes 26", all geared, good condition. Price.....	300.
Drill, Baush No. 3 multiple, cap. 30 spds., rectangular hd. 20x40". Price 1500.	
Grinder, No. 14 Gardner, b. b., disk, dry, 20" disks, good cond. Price 400.	
Grinder, No. 6 Besly two-spindle disk, 20" disks. Price.....	350.
Grinders, three No. 2 Gardner single spindle, double disk, with universal tables; good condition. Price, each.....	175.
Grinder, LaSalle automatic surface, good condition. Price.....	275.
Grinder, No. 12 B. & S. 8x36" pl., for wet grinding; good condition. Price 450.	
Grinder, No. 1 Brown & Sharpe universal, 10x24; good condition. Price 375.	
Grinder, No. 14 Besly single spindle ring wheel. Price.....	400.
Hoist, new Flory No. 14, 8x10" d. c., d. d. with boiler; A. S. M. E. for 125 lbs. New. Special price.....	1750.
Lathe, 18"x8' Lodge & S., q. c. g., d. b. g.; good condition. Price.....	475.
Lathe, 16"x9' Lehmann, d. b. g., q. c. g.; good condition. Price.....	475.
Lathe, 26"x14' Hamilton, q. c. g., d. b. g.; good condition. Price.....	1200.
Miller, No. 2 Cincinnati b. g. plain, 28x10x19; good condition. Price.....	500.
Miller, No. 1B Fox, hand & pwr. fd., 18x6x14; new, never used. Price.....	400.
Planer, 54"x34"x12' Pond. 4 heads; good condition. Price.....	2500.
Polishing & buffing machines, five New Britain drop head, good con- dition. Price, each.....	50.
Punch & Stake riveter, No. 3 Hilles & Jones 60" throat, rapid action; cap. full depth throat 4" in 7/16"; 16,000 lbs; two stakes. Price.....	1500.
Shear, Niagara 8', 18 ga., foot power, square, splendid condition. Price 275.	
Shear, Marshalltown No. 134 rotary splitting, cap. 4" plate; 4" throat. Arranged for motor drive. Like new. Price.....	750.

SECOND-HAND MACHINERY

FOR SALE BY

Jones Machine Tool Co.,

528-532 E. Front St., Cincinnati, O.

14"x 6' Hendey, tool room, (2). 14"x 6' Bradford, quick change. 14"x 6' Monarch, qck. chg., s. p., geared head, (2). 16"x 6' Lodge & Shipley, qck. chg. No. 2 Hendey universal. No. 1½ Brown & Sharpe, plain. 30"x12' Gray. 30"x 8' Gray, 1 head. No. 2 Sidney. Nos. 4 and 5 Niagara. No. 2 Robinson, o. b. No. 6 Toledo, o. b. inc. No. 4 Stiles b. g. punch. 16' Stockbridge, b. g. crank. 21' Smith & Mills b. g. crank, (2).	
LATHES. 18"x10' Lodge & Shipley, grd. hd. 20"x12' Greaves Klusman, q. c. 30"x12' H. S. & Gamble, q. c. 30"x16' Reed, l. c. cone drive. 48"x24' Niles, triple geared. MILLERS. No. 3B—Brown & Sharpe plain. No. 2 Kempsmith universal. PLANERS. 24"x 6' Powell. 42"x36"x26' Cincinnati, 2 heads. PRESSES. No. 6 Whiting punch. No. 8 Long & Allstatter punch. No. 75 Consolidated, b. g. No. 20 Bliss, o. b. inc., (5). Horning presses, Toledo and Bliss. SHAPERS. 21' American, back geared crank. 24' Kelly back geared crank. MISCELLANEOUS. Bolt cutters, 4" Acme. Bulldozer, No. 1 Williams & White. Drill presses, 24" Sibley & Ware (4). Gear cutter, 48" Brown & Sharpe. Gear hobber, No. 12 Barber-Colman. Grinder, No. 80 Heald, cylinder. Grinder, 10x50 Norton.	

FOR SALE BY

The Washburn Company,

Converter, rotary, d. c. and a. c., 10 k. v. a., 220 volt.....	75.
Drill, bench, with chuck & c. s.	10.
Drill, 2-spindle bench.....	25.
Emery wheel stand, No. 1 Besly.....	20.
Emery wheel stand, 2-spnd. cone pulley, 4" belt, with c. s.	25.
Friction clutch, 24" Lamondon, 3 15/16 bore.....	65.
Generator, plating, Hanson Van W., 500 amp., 5-6 v., d. c.....	65.
Generator, Kester Electric, 5-10 v., 1,000 amp., d. c.....	175.
Hack saw, power.....	20.
Hammers, 100 lb. poppet drop, (2), each.....	100.
Lathe, speed.....	20.
Lathe, speed, 12" Garvin.....	25.
Lathe, trimming, 12" swing.....	25.
Miller, Garvin No. 5.....	50.
Miller, No. 13 Kempsmith, with c. s.	50.
Miller, No. 8 Kempsmith.....	225.
Miller, B & S., Lincoln type..	100.
Miller, large pl., Lincoln type..	100.
Polishing mch., Hanson Van W., with c. s., (3), each.....	15.
Press, power, flywheel 22x33, stroke 14", bed 7"x13".....	65.

6126 S. La Salle St., Chicago, Ill.

Press, reducing, 4" stroke, with dial, Waterbury-F. Fury. pattern, wt. about 2,000 lbs; nearly new.....	\$175.
Presses, dbl. action, 34" str. outside slide, 5" str. inside slide, Waterbury-F. Fdry. pattern, wt. about 3,000 lbs., nearly new, with dials, (3), each....	250.
Press, foot.....	10.
Screw slotter, Manville auto....	50.
Shaper, 16" Gould & Eberhardt.....	175.
Swaging machine, cold, No. 2 Goodyear.....	100.
Swaging mch., large, Dayton type.....	125.
Swaging mchs., medium, Dayton type, (3), each.....	80.
Swaging mchs., small, Dayton type, (2), each.....	60.
Turret lathe, small.....	40.
Turret lathes, Garvin, b. g., 12" swing, c. s. & draw-in chuck, (3), each.....	80.
Turret lathe, Pearson, 12" swing, 3" belt, 4-st. cone. pump and c. s. and draw-in collet.....	80.
Turret lathe, b. g., p. f., 14" sw.	100.
Turret lathe, No. 4 Warner & S.	150.

SECOND-HAND MACHINERY

FOR SALE BY

Delta Equipment Co., - 148 N. 3rd St., Philadelphia

ENGINE LATHES.

10"x 4' Reed, plain change.....	\$ 90.	17"x 8' Greaves-Klusman.....	\$300.
12"x 4' Worcester, semi q. c....	275.	17"x 8' Porter, q. c.....	450.
14"x 6' American, geared head	550.	18"x 8' Prentice, q. c.....	500.
15"x 8' Sebastian, gap.....	325.	21"x12' LeBlond, q. c.....	625.
15"x 8' Carroll-Jamieson, q. c....	400.	24"x10' Carroll, semi q. c.....	600.

MILLING MACHINES.

No. 6 Steptoe, b. g., vertical attachment, dividing heads...	\$500.	No. 2B Brown & Sharpe, motor driven.....	\$550.
No. 2 Owens universal.....	650.	No. 3 Hendey.....	575.
14" Smith & Mills.....	\$300.	SHAPERS.	
15" Kelly	300.	16" Hollingworth, b. g.....	\$450.
16" Cincinnati.....	450.	20" G. & E., b. g.....	800.
		24" Kelly, b. g.....	700.

FOR SALE BY

Peninsular Machinery Co., 429-31 E. Jefferson Ave., Detroit, Mich.

LATHES.

9"x14' Porter-Cable, (4).	14"x 8' Monarch, l. c. g., taper.
13"x 5' South Bend, l. c. g.	16"x 8' Bradford, l. c. g.
13"x 5' Champion, l. c. g.	16"x 8' LeBlond, quick change.
14"x 6' Prentice, l. c. g., (2).	17"x10' LeBlond auto.
14"x 6' Bradford, q. c.	18"x8' Monarch, q. c. (2).
14"x 6' Carroll-Jamieson, (5).	21"x11' LeBlond, all geared, (2).
14"x 6' Flather, l. c. g.	26"x10' LeBlond crankshaft, (2).
14"x 6' Reed, l. c. g., (5).	3½x36 Lo-Swing.
14"x 6' Rockford, l. c. g.	

DRILLING MACHINES.

3-spdl. Henry & Wright, h. s., b. b.	28" Barnes, s. h., tapper.
3-spdl. Leland-Gifford, h. s., b. b.	26" Hoefer, st. h. d., (2).
22" Sibley all-gearred, p. f., with tap.	No. 3 Avey, h. s.
22" Sibley all-gearred, p. f.	No. 3 Baush multiple
22" Barnes s. h., b. g., p. f.	25" Fosdick s. h. all-gearred tapper.
26" Barnes, s. h., b. g., p. f.	3' Western plain radials, (2).

MILLING MACHINES.

No. 6 Whitney hand.	No. 32 Kempsmith.
United States hand.	No. 19 Cincinnati plain.
No. 6 Steptoe, b. g. and p. f.	12" Cincinnati plain manufacturing.
No. 0 Farwell q. c.	No. 2 Brown & Sharpe plain.
Briggs type A, (2).	No. 1-B LeBlond univ., cone type.
No. 12 Brown & Sharpe.	48" Newton 2 spindle.

TURRET SCREW MACHINES.

1" Dreses, p. h. and p. f.	2x26 Pratt & Whitney, f. h.
4" Cleveland auto., type B.	2½x26 Pratt & Whitney, a. c.
1½" Defiance, f. h.	
2" Milholland, f. h.	No. 4 Warner & S. f. h. turret lathe.

GRINDERS AND POLISHERS.

No. 1 Brown & Sharpe universal.	No. 210 Heald magnetic.
6x32 Norton plain.	20" Blount wet grinders, (2).
10x24 Landis plain.	No. 4 Webster & Perks polishing.
No. 2 Gardner disc grinder.	Bennett & O'Connell dbl. sp. pol.
No. 24 Gardner vertical.	No. 23-B Valley City disc.
No. 70 Heald internal.	No. 220 Badger automatic.
No. 50 Heald cylinder.	

MISCELLANEOUS.

Band saw, 6" Napier.	Lapping mchs., Bethel-Player, (2).
Cutting-off mch., 4" Hurlbut-Rogers.	Metal cutter, No. 1 Gray.
Filer, No. 2 Cochrane & Bly.	Screw slotter, No. 1 National Acme.
Gear tester, bevel, Gleason.	Threader, 2-sp. Webster & Perks.
Hammer, drop, No. 5 Williams-W.	Threader, H. & G. 9/16 automatic.
Keyseater, No. 1 Davis.	Tumbling barrels, No. 3-S Globe, (2).

SECOND-HAND MACHINERY

FOR SALE BY

Badger-Packard Mch. Co., 133-139 W. Water St., Milwaukee, Wis.

REBUILT MACHINERY.

Lathe, 13-22" x 5' gap, c. r.....	\$ 350.	Press, No. 2 o. b. i.....	\$ 250.
Lathe, 11" x 5' Rockford, c. r....	165.	Press, No. 3 Niagara, o. b. i...	250.
Lathe, 16" x 10' Perkins, c. r....	225.	Press, No. 3 Toledo, o. b. i....	325.
Lathe, 18" x 8' Hamilton, c. r....	275.	Press, No. DG-4 Ferracute, gd.	500.
Miller, No. 1 Kempsmith pl....	450.	Screw mch., W. & S. No. 2.	275.
Miller, No. 2 Milwaukee, plain....	450.	Screw machine, Smith 1", new	300.
Miller, No. 3 Kempsmith, pl....	500.	Shaper, 14", friction.....	150.
Miller, No. 1 B. & S., univ....	450.	Shaper, 16" Davis, plain.....	350.
Press, No. 10 Stoll, bench.....	60.	Shaper, 18" American, b. g....	500.
Press, No. 81 Consolidated....	85.	Shaper, 48" Morton, draw cut.	300.
Press, No. 1 Perkins model A	90.	Square shear, 36" gap, ft. pwr.	165.
Press, No. 2 Ferracute.....	125.	40 Lathe screws, 6 to 12" long.	
Press, No. 1 R. & K., o. b. i....	150.	Nos. 1, 2, 4, 5, 6 pitch \$1.00 per ft.	

FOR SALE BY

The H. A. Smith Machinery Co., - - -

Syracuse, N. Y.

BALANCING MACHINE.

Rockford style B, motor driven.

BORING MILLS.

Gisholt 36" vertical, with combination chuck in table.

Gisholt 42" vertical, 2 swivel heads.

DRILL PRESSES.

Allen 4-spindle ball bearing.

Barnes 34", bk. grd., sliding head.

Barr 6-spindle, 4" capacity.

Snyder 36", b.g., slid.hd., tap. attach.

Snyder 30", bk. grd., sliding head.

RADIAL DRILLS.

Fosdick 5' universal, motor drive.

Hammond 4' sensitive, tap. att., (3).

GEAR CUTTERS.

26" Brown & Sharpe No. 3.

Fellows No. 62 gear shaper, motor

48" Gould & Eberhardt.

GRINDERS.

No. 10 Brown & Sharpe plain.

12x40 Modern plain.

12x36 Modern, new.

16x52 Landis plain.

10x72 Landis plain.

UNIVERSAL TOOL AND CUTTER GRINDERS.

Wells No. 190 universal.

INTERNAL GRINDERS.

Bryant No. 10-A.

Brown & Sharpe No. 3 universal.

Brown & Sharpe No. 23.

Heald No. 70.

Heald No. 60.

Madison Gisholt automobile cylinder grinder.

LATHES.

20x10 Hendey, taper attachment.

12x6 Seneca Falls style E.

24x12 Hendey, taper attachment.

14x24x5 $\frac{1}{2}$ ' bed Barnes, gap.

12x6 Seneca Falls, with pan & taper.

21x12 Porter, with increase swing att.

PORTER-CABLE LATHES.

Porter-Cable, with complete piston turning equipment.

MILLING MACHINES.

No. 13-B Brown & S. production.

Brown & Sharpe No. 5 vertical.

Cincinnati No. 3 plain.

No. 00 Brown & Sharpe hand miller.

No. 3 B. & S. vert., all power fds.

PLANERS.

24" x 24" x 6' Chandler.

36" x 36" x 24' Pond, 4 heads.

26" x 26" x 8' Niles.

74" x 54" x 24' Pond, 4 heads.

26" x 36" x 10' Whitcomb.

AUTOMATIC SCREW MACHINES.

No. 2-A W. & S. hollow hex. turret lathes, with chucking equipment.

21" Gisholt turret lathes, \$300 to \$500, according to condition, (3).

No. OG Brown & Sharpe automatic.

Cleveland 4" automatic.

MISCELLANEOUS.

Cutting-off machine, Hurlbut-Rogers, 4".

Grinder, Sellers auto. twist drill.

Die slotting machine, Garvin.

Tapping machine, Garvin No. 2.

Tapping machine, Garvin No. 2X.

SECOND-HAND MACHINERY

FOR SALE BY

McMullen Machinery Company,

Automatic, 8" Cleveland.
Automatics, No. 00 B. & S.
Band saw, 10" Napier, metal.
Cut-off saw, No. 4 N. & B.
Drill, 31" Barnes, sliding head.
Drill, No. 1 Avey 2-sp., p. f.
Grinder, Cleveland, profile.
Grinder, No. 6-A Bryant.
Lathe, 9"x21" Sundstrand, mfg.
Lathe, 24"x26 Greenlee, flat turret.

Ask for Complete List.

Grand Rapids, Mich.

Miller, No. 2-H Becker vertical.
Pipe mch., 6" Merrill No. 6f.
Press, Chicago scrap baler.
Press, No. 3 Manville, d. a.
Presses, No. 6 Manville, pillar, (3).
Presses, No. 6B Manville, pillar, (2).
Shear, No. 14 Pettengell, rotary.
Shear, No. 152 Niagara, sq.
Shear, No. 2 W. F. Co. 36" gang.
Welders, No. 10-A Thomson vert. (7)

FOR SALE BY

Reliance Machinery Sales Company

Brighton Road at Pennsylvania Ave.,

Pittsburgh, Pa.

Bolt cutter, Acme 2" class "A", 3" to 2".
Bolt cutter, 3" Landis, single head,
lead screw.
Boring mills, 30" Bullard, 1 head.
Boring mill, 34" Colburn, 1 head.
Boring mill, 72" Betts vert., 2 hds.
Boring mill, 90" Niles vert., 2 hds.
Bulldozer, No. 5 Williams & White.
Die slotter, 3" stroke, Garvin.
Drill, 24" Hoefer, sliding head.
Drill, 26" Rockford, sliding head.
Drill, 36" Snyder, sliding head.
Drill, 2" 6" Carlton high speed radial.
Drills, Amer. 4 & 5' radial, g. b., s.p.d.
Drill, Allen 4-spindle, No. 2 taper.
Drillers, 5-spindle Detroit, (2).
Gear cutter, 24" Becker-B. auto.
Grinder, 6"x32" Norton plain cyl.
Grinder, 14" Pratt & Whitney ver-
tical surface.
Lathe, 14"x 8' Hendey, tie bar.
Lathe, 14"x8' Whitcomb-Blaisdell.
Lathe, 16"x8' Hendey, tie bar.
Lathe, 17"x8' Sidney, hyd. duty, q.c.g.
Lathe, 18"x8' Lodge & S., q.c.g., t.a.
Lathe, 18"x10' Lodge & S., q.c.g., s.p.
Lathe, 18x10' Reed, q. c. g., d. b. g.
Lathe, 20"x10' Lodge & S., q. c. g.
Lathe, 24"x12' Rahn & L., q. c. g.
Lathe, 30"x12' Johnson, triple grd.
Lathe, 34"x12' Le Blond, trip. grd.
Lathe, 36"x18' American, grd. hd.
Miller, No. 1 Milwaukee universal.
Miller, No. 2 Cincinnati, p. vert.
Miller, No. 2 Cincinnati plain, v. a.
Miller, No. 3 Hendey plain.
Miller, No. 4 Cincinnati plain.
Miller, No. 29 Oesterlein universal,
v. a., m. d.
Miller, model "R" Becker, vert., s.p.d.
Miller, model "C" Becker vertical.
Miller, No. 32 Kempsmith mfg.
Nut tapper, 2" National, 6-spindle.
Pipe machine, 1" to 2" Armstrong.
Pipe machine, Jarecki, cap. 1" to 4".
Pipe machine, Merrill, 1 1/2" to 6".

Pipe machine, Merrill, 2 1/2" to 12".
Planer, 24"x24"x 6' Gray, 1 hd.
Planer, 30"x20"x10' Woodward & P.
Planer, 36"x36"x 8' Cincinnati, 1 hd.
Planer, 36"x36"x10' Gray, 1 head.
Press, No. 3 Adriance, o. b. i., 2" str.
Press, No. 4 Toledo, o. b. i., 2 1/2" str.
Press, No. 5 Toledo, o. b. i., 3" str.
Press, No. 10 Bliss, reducing, 4" str.
Press, No. 23 Stoll horning.
Press, No. 52 Bliss, s. s., 2" stroke.
Presses, Nos. 61 & 62 Bliss o. b. f. w.
Press, No. 73 Consolidated, o. b., 2 1/2" str.
Press, No. 74 Consolidated, o. b., 2 1/2" str.
Press, No. 74 Consolidated, geared.
Press, No. 65 Consolidated, geared.
Press, No. 87 Niagara screw.
Press, Ferracute DD2, o. b. i., cam.
Punch, Cleve., 24" thrt., 1" x 1", m. d.
Punch, Cleve., 15" thrt., 1" x 1", m. d.
Punch, Cleve., 72" thrt., 1" x 1", m. d.
Reduction gear, Foote, 50 to 1.
Saw, No. 8 Marvel metal band.
Saws, American metal sw., m. d., (2).
Screw mch., No. 1 W. & S., with tools.
Screw machine, No. 2 Foster, pl. hd.
Screw machine, No. 2 W. & S., pl. hd.
Screw machine, No. 4 Foster, g. f.
head., power feed to turret.
Screw machine, No. 6 Foster, g. f.
head., power feed.
Screw machine, 3 1/2" Cleveland,
model "A", automatic.
Shaper, 18" Columbia b. g. crank.
Shaper, 20" Cincinnati, b. g. crank.
Shaper, 21" American, b. g. crank.
Shaper, 24" Milwaukee, b. g. crank.
Sh., No. 20 Quickwork, cap. 12 gauge
Shear, 48" Bertsch, 18" gap, 1" cap.
Shear, squaring, 96" Stoll, 16 ga.
Shear, squaring, 96", power, 20 ga.
Threader, Geometric, cap. 1" to 1".
Turret lathe, 24"x24", J. & L., flat
head, s. p. d.
Upsetter, 3" Acme.

Our warehouse is full of bargains. What have you for sale?

SECOND-HAND MACHINERY

FOR SALE BY

Clark Machinery Co., 1235-45 St. Clair Ave., Cleveland, O.

Brake, 8', 16 gauge.
Millers, vertical, No. 2 Becker.
Millers, vertical, No. 5 Becker.
Millers, vertical, No. 2 Brown & S.
Millers, univ., No. 2 Cincinnati, (2).
Planer, 42" x 42" x 8' Gray, 2 heads.
Machine tools for every purpose. Send us your inquiries.

Shaper, 10" Pratt & Whitney.
Shaper, 16" Ohio.
Shaper, 16" Gould & Eberhardt, b. g.
Shaper, 20" Smith & Mills.
Shaper, 24" Ohio, back geared.
Square shear, 6', 18 gauge.

FOR SALE BY

Bell & Howell Company, 1801 Larchmont Ave., Chicago, Ill.

The following are surplus machine tools, which are guaranteed as good or better than new factory tools:

Lathe, 12" Reed Prentice, equal new.
Miller, No. 3 Garvin duplex, 99% new.
Profiler, Reed Prentice 2-spindle.

The above equipment has seen little or no use whatever. Has been used only in our own precision machine shop and on work calling for tolerance of .0001". Best offer takes any or all.

FOR SALE BY

**Machine Tools Sales Company
236 Commercial Trust Bldg., Philadelphia, Pa.**

Attractively Priced Machinery from a Modern Plant

BORING MACHINES.

14' & 20' Betts vert., 2 swiv. hds., belt.
10' Niles vert., 2 swiv. hds., mtr. dr.
8' Niles vert., 2 swivel heads, belt.
8" Bickford vert., 2 swiv. hds., belt.
72" Gisholt vert., 2 swiv. hds., m. d.

DRILLING MACHINES.

6' American plain & univ. radials.
2 $\frac{1}{2}$, 3', 4' & 5' radials, various makes.
Haush mult. 28" round hd., 14 spdl.
Western 25" round head, 6 spindle.
Nos. 513 & 310 Baker h. d. drills.

GRINDERS.

12" x 36" univ., 10" x 30" plain Landis.
No. 1 Brown & Sharpe surface.

LATHES, TURRET AND AUTOMATICS.

Fay automatics, latest type.
No. 3-A W. & S. hollow hex. turret.
No. 2-A W. & S. universal turret.

ENGINE LATHE.

84" x 40" Putnam, geared head, motor drive.
65" x 35" Pond, geared head, mtr. dr.
50" x 15" New Haven, blocked to swing 60", cone drive.
36" x 18" Lodge & Shipley, s. p. d.

MILLING MACHINES.

No. 10 Niles-Bement-Pond vertical, motor drive.

SHAPERS.

Nos. 4 & 5 Cincinnati plain, cone dr.
24" Gould & Eberhardt cone drive.

MISCELLANEOUS.

24" American, vise and countershaft.

Thread miller, No. 12 Lees-Bradner.
Time clocks, International, with card racks.

SECOND-HAND MACHINERY

FOR SALE BY

The Patterson Tool & Supply Co., Dayton, Ohio

Air compressor, 3 $\frac{1}{2}$ "x4" Ingersoll-R.
Grinder, No. 2 American surface.
Lathe, bench, Hjorth.
Lathe, bench, 4x5 Elgin.
Lathe, 14"x6' Rockford.

Miller, U. S. hand.
Miller, No. 25 Hecker plain.
Miller, No. 2 Rockford universal.
Screw mch., No. 2 Bardous & O.
Shaper, 24" Potter & Johnston.

FOR SALE BY

Donahue Steel Products Co., 204 N. Jefferson St., Chicago, Ill.

Bulldozers, Nos. 1, 2, 3, 4, 5 & 6 Williams & White.
Hammers, cushioned helve, 25, 40, 60, 80, 100 & 200 lb. Bradley.
Hammers, upright, 50, 100, 200, 300 & 500 lb. Bradley.
Hammers, compact, 30 lb. Bradley.
Hammers, upright, Bradley strap, 30, 50, 75 and 100 lb.
Hammer, crank lift drop, Williams & White No. 5.
Hammer, board lift drop, 800 lb. Williams & White.
Punch, s. e., No. 1 Long & A., 1 $\frac{1}{2}$ " thru 1", arch. jaw, motor drive, 3" stroke.
Punch, Rock River, 4" thru 1 $\frac{1}{2}$ ", 24" throat.
Punch, s. e., No. 3 Long & Allstatter, 7" thru 3", 36" thrt., architectural jaw.
Punch & shear, d. e., No. 14 Williams & White, 1 $\frac{1}{2}$ " thru 1".
Punch & shear, Cleveland, e. f., 30" throat, arch. jaw, gag socket punches,
1 $\frac{1}{2}$ " thru 1".
Saws, hot, Nos. 2 & 3 Ajax.
Shears, bar, Long & Allstatter, table cast on slant, cap. 1 $\frac{1}{2}$ " round.
Shears, bar, Long & Allstatter No. 2, table cast on slant, cap. 2" round.
Shear, alligator, Dolger & Kirstin, capacity 1 $\frac{1}{2}$ " round.
Shears, Pels 5" & 6"; United Engineering 4" guillotine.
Storage battery elevating platform truck, Automatic Transportation Co.
Upsetters, two 1 $\frac{1}{2}$ " Ajax; one each 1" Ajax, 1 $\frac{1}{2}$ " National, 1" Acme, 2" Acme.
Threading machines, one No. 1; one 1 $\frac{1}{2}$ " sgl. spdl. Landis; two 1" dbl. spdl.
Landis, with lead screws; one 3" single spindle Morgan Reliance.
Thread rollers, one each 1", 1 $\frac{1}{2}$ ", 2" and 3".
Tumbling barrels, 24x50 and 30x50 Sly, (2).

All of the above in our Chicago stock.

FOR SALE BY

The Randle Machinery Co., 1723 Powers Street, Cincinnati, Ohio

ENGINE LATHES.

14"x 6' Lodge & S., q. c.....	\$ 450.	24"x 8' Schumacher & Boye, loose change.....	\$ 500.
15"x 6' Flather, loose chnge.	200.	30"x16' Reed, loose change...	900.
16"x 8' LeBlond, loose chnge	300.	48"x24' Niles, loose change...	2,000.
21"x10' LeBlond, quick chge.	750.	PLANERS.	
<hr/>			
32"x32"x14' American, 2 heads.			\$1,250.
36"x36"x14' American, 2 heads.			1,350.
36"x36"x18' Niles, double housing, each housing equipped with 2 rail heads, motor drive.....			1,500.
42"x42"x26' Cincinnati, 2 heads.			2,250.
60"x60"x20' Niles, 4 heads, motor drive.			3,000.
Pedrick & Ayer open side, planes 30" wide, bed 11' long.....			1,000.

MISCELLANEOUS.

Bolt cutter, Acme 4" sgl. hd...\$ 750.	Miller, No. 3 Cincinnati pl....\$ 800.
Boring mill, 60" Niles vert., d. c. motor drive, with mtr... 750.	Radial drill, 6" Niles full univ., d. c. motor dr., with motor... 750.
Drill press, 45" upright, back geared, power feed..... 300.	Shaper, 12" Pratt & Whitney crank, traveling head..... 300.
Drill press, 24" Aurora up- right, back gear, pwr. fd... 275.	Shaper, 29" Smith & Mills, back grd. crank, late type.. 800.
Grinder, No. 60 Heald cylinder Hack saw, Kwik Kut, power, 14" blade, 50.	Shaper, 24" Kelly, b. g. crank, Turret lathe, 24" Gisholt, d.c. motor drive, with motor.... 500.

Many other bargains. Send us your requirements.

SECOND-HAND MACHINERY

FOR SALE BY

F. H. Allen,

Geared ladle, second-hand, 38" deep, 49" wide at top, splendid condition.
Hydraulic wheel press, brand new, latest improved, 48" between tie bars,
150 tons capacity.

Have no use for these machines and will sell cheap.

Donaldsonville, La.

Botwinik Brothers,

21 Sylvan Ave., New Haven, Conn.

"Connecticut Machinery Merchants"

UNIVERSAL GRINDING MACHINES.

10-Brown & Sharpe No. 1 universal grinding machines, complete with all regular standard equipment, overhauled and in A-1 condition. Price \$375 each f. o. b. New Haven, Conn. Act quick.

FOR SALE BY

Brownell Machinery Co.,

11-13 Eddy St., Providence, R. I.

BORING MILLS.

24" Bullard, New Era.

30" Baush vertical.

24" Bullard rapid production.

No. 1 Cleveland horizontal, 2½".

26" Henry & Wright sen. radial.

DRILLS.

25" Weigel, sliding head.

3-spindle Reed-Prentice.

23" Snyder, stationary.

4-spindle Barr, power feed.

Single spindle Allen, h. s., b. b.

5-spindle Henry & Wright.

Whiton hand.

GEAR CUTTERS.

No. 12 B. & S., universal, 12x8.

No. 13 B. & S. automatic, 18x4.

No. 12 B. & S. plain 8x86.

26" No. 3 B. & S. automatic.

No. 3 Wilmarth surface.

No. 2 B. & S. tool & cutter.

No. 1 W. & M. cutter & reamer.

20" Taylor & Fenn wet tool.

GRINDERS.

20" Blount wet tool.

11"x 4' Mann.

LATHES.

18"x 8' Monarch, q. c. g.

14"x 6' Monarch, q. c. g.

20"x 8' Roulsted.

14"x 6' Rockford, economy.

26"x 16' Reed, taper.

PLANERS AND SHAPERS.

54"x 42"x 14' Gray, spur gear, 3 hds.

17"x 17"x 5' Whitecomb.

15" Hendey friction shaper.

22"x 22"x 5' Whitecomb.

16" Ohio plain shaper.

24"x 24"x 6' Powell.

24" Potter & Johnston universal

26"x 30"x 14' Whitcomb-Blaisdell.

shaper.

30"x 30"x 8' Bement Miles.

MILLS.

3x5.

12x18 Standard.

4x6 Standard.

12x15 Hoagland hot rolling mill.

5x 8 McWilliams.

PRESSES.

No. 54 Niagara geared, 4".

No. 2½ Bliss inclinable, 3".

100 lbs. Standard plain drop.

No. 3B Standard inclinable 2".

200 lbs. Standard plain drop.

No. 4 Manville, pillar pattern, 1½".

200 lb. Standard automatic drop.

No. 1 Standard broaching & drawing.

No. 24 Atlas arbor press.

SCREW MACHINES.

No. 2P Potter & Johnston piston

and piston ring machines.

8" Cleveland model "B" automatics, good as new.

No. 2½ Garvin, g. f. h.

Miller, No. 6 Becker vertical.

No. 6-A P. & J. automatic chucking.

Miller, No. 6 Whitney hand.

Miscellaneous.

Miller, No. 15 Garvin plain.

Broaching machine, No. 0 LaPointe.

Pipe machine, No. 7 B Jarecki, 1-3".

Charging outfit, G. E., 100 batteries,

45 k. w. motor, 550 v., a. c., 60 cy.,

3 ph. new.

Slotter, 12" Bement-Miles.

Coupling, No. 2 Almond, quarter-

turn, 10 h. p.

Tapper, No. 2 Garvin vertical.

SECOND-HAND MACHINERY

FOR SALE BY

The Canton Machine Shop.	-	320 Rex Ave., S. E., Canton, Ohio
Boring machine, auto cylinder.		Lathes, 15"x6' Rockford, t. a., c. r., 90%, (3).
Boring machines, Walcott cylinder, new, (5).		Lathe, 16"x6' Reed, t. a., c. r., 75%.
Drill, Henry & Wright, upright.		Milling mch., U. S. plain, 90%, (4).
Grinders, Persons & Arter rotary, with magnetic chuck, 90%, (2).		Milling machine, No. 2 LeBlond univ., 50%.
Grinders, 18" Gardner double disc, 90%, (2).		Planer, 26"x26"x6'.
Lathes, 12" P. & W., 75%, (2).		Shaper, 18" Smith & Mills.
		Shingle edging machines, new, (3).

FOR SALE BY

Herman L. Winterer,	943-53 N. Front St., Philadelphia, Pa.
	LATHES.

43"x17 ⁴ " Bement-Miles.	21 ¹ 4"x8' LeBlond.
37 ¹ 2"x14" Johnson d. b. g., q. c. f., t. a.	20"x18 ⁶ ' Walcott, d. b. g., q. c. g., (2).
32"x12' Pittsburgh, heavy duty, q.c.g.	20"x 8' Whitcomb Blaisdell, q. c. g.
27"x12' Bullard.	19"x10' Draper, patent head.
26"x11' Wickes, q. c. g.	18"x 8' Davis, q. c., d. b. g.
28"x10' Niles, q. c. g..	18" x 7' Chard, d. b. g., semi q. c. g.
25"x14' Hendey, q. c. g., taper attachment, oil pan, (2).	18"x6' to 8' lathes, (6).
24"x14' Porter.	16"x 8' Greaves & Klusman, b.g., t.a.

	LATHES.
	No. 3 Kempsmith.
	14"x 6' Warner & Swasey.
	16"x6' Johnson, back grd.
	No. 3 Bardons & Oliver back grd.
	14 ¹ 2"x5' 3" Pratt & Whitney, (2).
	No. 3 Foster Kimball.

TURRET

3x28" Pond, triangle.
3x36" Pratt & Whitney, hollow hex.
20" Acme flat, 28", h. s. motor drive.
20x7' 6" Pratt & Whitney, back grd.
20x7' Bridgeport, 28" h. s.
19"x7' Fay & Scott, back grd.
No. 22 ¹ 2 Garvin Monitor.

DRILL PRESSES.

42" Gang radial, s. p. speed box.	28" Rockford, q. c. g. feed (2).
40" Barnes horizontal radials, (2).	14" 6-spindle Allen sensitive.
36" Bickford radial, circular base, motor driven.	Henry & Wright sensitive.
30" Davis & Egan radial.	Plain drills, all sizes.
	Drill presses, assorted sizes.

MILLING MACHINES.

38"x6' Ingersoll horizontal slab.
No. 5 Cincinnati, table 9 ¹ 2"x50 ¹ 2".
No. 15 Garvin, table 12x42".
No. 3 Becker Brainard, table 12x40".
No. 3 Hendey-Norton, q. c. g.

PLANERS AND SHAPERS.

12"x10"x25' Sellers planer, 4 heads.
30"x30"x8' Hewes & Phillips planer.
30"x30"x8' Putnam planer.
26 ¹ 2"x26"x 6' Hendey planer.

MISCELLANEOUS.

Boring mill, car wheel, 60" Newton.	Hammer, 750 Merrill, board drop.
Boring, drilling and milling machine, 17 ¹ 2" Bement Niles horizontal.	Hammer, 1000 lb. Merrill board drop.
Grinder, 19 ¹ 2"x5' Landis universal.	Bagger, 1250 lb. Bell steam.
Grinder, No. 1 Norton universal.	Keyseater, 18" stroke Morton.
Grinder, disc, No. 17 Besly.	Punch presses, all sizes, (55).
Grinder, disc, No. 1 Besly.	Punch & shear, Industrial Wks. d.e., capacity 4" in 1", squaring 4"x6".
Hammer, 15 lb. Bradley helve.	Riveter, air, 6" gap Allen, cap. 1 ¹ 2".
Hammer, 25 lb. Little Giant, m. d.	Riveter, air, 25" gap Allen, cap. 1 ¹ 2".
Hammer, 40 lb. Bradley, he.ve.	Slotter, 14" Niles.
Hammer, 60 lb. Hotchkiss.	Tooth rounding mch., Schuchardt & Schutte.
Hammers, 60 lb. Bellefonte upright; 2	
Hammer, 500 lb. Merrill board drop.	

Large assortment of General Machinery. Send for Complete Price List.

America's Greatest Values

PIPE MACHINES

2" Curtis.
6" Bignal & Keeler.
12" Bignal & Keeler.

PRESSES

No. 74 $\frac{1}{2}$ Bliss s. s. 6" stroke.
No. 75 $\frac{1}{2}$ Bliss s. s. 6" stroke.
No. 58 Toledo s. s. 6" stroke.
No. D 20' Ferracute s. s. 16" str.
No. 256 Toledo s. s. double crank.
No. 6N American, o. b. i., 3" str.
No. 5 Bliss Stiles type, 2 $\frac{1}{2}$ str.

STRUCTURAL MACHINERY

No. 1 Cleve. I-Beam Straightener.
6x6x1" Double Angle Shear.
15" Pels I-Beam Shear.
10" thr. Cleve. Horz. Punch 1" cap.
20" thr. Cleve. s. e., Punch 4" cap.
24" Whiting s. e. Punch 1" cap.
36" Cleveland, s. e. Punch 1" cap.
42" Whiting s. e. Punch 1" cap.
48" Cleveland s. e. Punch 1" cap.
Stand Eng. Beam Cooper & Notcher
Long & A.hvy. duty Punch, Style D.
No. EG6 Ferracute s. s., 3" str.

PLANERS

16"x16"x48' Modern, 1 head.
22"x22"x5' Gray, 1 head.
24"x24"x6' Gray, 1 head.
36"x32"x10' Pond, 1 head.
48"x48"x14' Patch, 4 heads M. D.
48"x48"x14' W. & P., 4 hds. M. D.
48"x28"x18' New Haven, 2 heads.

SHEARS

1 $\frac{1}{2}$ " G. & Mc. Rod Shear.
1 $\frac{1}{2}$ " Carlin Alligator Shear.
2 $\frac{1}{2}$ " Chicago Alligator Shear.
4" Carlin Alligator Shear.
5" Carlin Alligator Shear.
6 $\frac{1}{2}$ " United Alligator Shear.
20" Mesta Bloom Shear.

GRINDERS

18"x2' U. S. Floor Grinder, m. d.
No. 2 Diamond Wet Tool Grinder.
12"x36' Fitchburg Plain.
16"x36' Landis Universal.
16"x66' Landis Universal.
16"x68' Landis Crankshaft.
26"x36' Landis Plain, with crank-
shaft attachment.

NOTE: For boiler, compressors, generator, steam engines,
motors, etc., see our stock. Complete list on request.

ENGINE LATHES

12"x 5' Vernon, q. c. g., t. a.
16"x 6' Putnam, taper attach.
16"x 8' Bradford, q. c. g.
19"x10' Le Blond.
20"x10' Bradford.
21"x12' Le Blond, q. c. g.
24"x12' American, q. c. g.
30"x16' Le Blond, q. c. g.
36"x30' American, q. c. g., grd. hd.
36"x32' Bridgeford, q. c. g.,
42"x22' American, " " "
42"x23' Putnam, " " "
42"x30' American, " " "
42"x31' Putnam, " " "
48"x24' Bridgeford, " " "
60"x40' Fifield, triple grd.

BORING LATHES

36"x40' Bridgeford Geared Head.
36"x56' Bridgeford Geared Head.
39"x48' Amalgamated Grd. Head.
39"x64' Amalgamated Grd. Head.
48"x44' Bridgeford Geared Head.
48"x50' Amalgamated Grd. Head.

HAMMERS (Steam)

300-600-800-1000-1200-2000-2500-4000
and 6000 single & double frame.

HAMMERS (Board)

400-600-800-1000-2000 2500 and 3000
Bliss and Chambersburg.

BOLT CUTTERS

No. 3 Geometric, cap. 4".
1 $\frac{1}{2}$ " National double head.

RIVETERS

Allen 32" thr., 16" gap.
Allen 34" thr., 14" gap.
Allen 66" thr., 13 $\frac{1}{2}$ " gap.

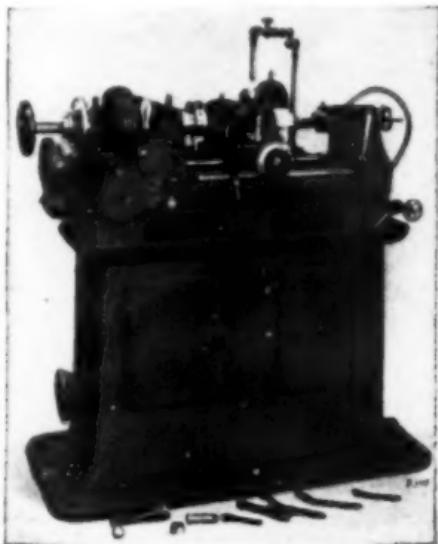
MISCELLANEOUS

6' Niles Plate Bend Roll, 4" cap.
1 $\frac{1}{2}$ " Ajax Forging Machine.
6' Lennox Rotary Shear.
6" class A Lovekin Flanging Mch.
6' N. B. P. Radial, t. a.
8-spdl. Bausch Multi. Drill, 1" cap.
90" Newton Cold Cutting-off Saw.
62" Newton Cold Cutting-off Saw.
36" Newton Cold Cutting-off Saw.
20" Newton Cold Cutting-off Saw.
No. 4B W. & W. Bulldozer.
72" Colburn Vertical Boring Mill.
30" Bullard Boring Mill.
10", 16" to 20" Slotters.

Harris Brothers Company
35th and Iron Sts.
CHICAGO

17 State Street
NEW YORK

90% New Thread Millers



1—PRATT & WHITNEY 4½" x 12", as illustrated,
arranged for motor drive, with 1 h. p., 220 volt, 60
cycle, 3 phase General Electric motor,----- \$575.

1—PRATT & WHITNEY 4½" x 12", as illustrated,
arranged for motor drive, with 1 h. p., General
Electric 220 volt, 60 cycle, 3 phase motor, with pump
and piping and with motor for operating pump,---- \$625.

1—WALTHAM 6", with General Electric ½ h. p.,
220 volt, 60 cycle, 3 phase motor,----- \$375.

These Thread Millers have been in actual use for
less than a month; they are actually nearly new
and in perfect order.

Send for list of other used tools we have for sale

Monarch Machinery Co.
300 North Third Street, PHILADELPHIA, PA.

"Factory" Rebuilt Tools

Every Machine Rebuilt in a Machine Tool Factory

The following tools are exceptional bargains. The majority of these machines have been used exclusively in our own plant, where they have received the very best of care and attention, and all tools in this list have been completely overhauled and rebuilt right here in our own shop, consequently they cannot be classed with the average second-hand machine. They are factory rebuilt tools of the very highest quality, and many real bargains are included in this list.

LATHES

- 1-16"x 8' American, quick change gear, single bk. grd. head and taper att.
- 1-18"x 8' American High Duty, quick change gear, with patented grd. head.
- 1-18"x10' American High Duty, quick change gear, with patented grd. head.
- 1-18"x14' American turning lathe, without screw cutting mechanism.
- 1-20"x10' American High Duty, quick change gear, with patented grd. head.
- 1-20"x12' American, quick change gear, with single back geared head.
- 1-24"x12' Greaves-Klusman Heavy Pattern, qck. chg. gr., dbl. bk. grd. hd.
- 1-24"x14' American High Duty, with single back geared head.
- 1-30"x10' American High Duty qck. chg. gr. with double back geared head.

RADIAL DRILLS

- 1-3' American Ball Bearing Sen. Radial, with elev. table and tapping att.
- 1-3' Reed-Prentice Plain Radial, with tapping att. and gear box drive.
- 1-3' Mueller Plain Radial, with tapping attachment and gear box drive.
- 1-4' American Plain Radial, with tapping attachment and gear box drive.
- 1-5' Fosdick Plain Radial, with tapping attachment and cone pulley drive.
- 1-6' Bickford Plain Radial, with tapping attachment and gear box drive.
- 1-6' Fosdick Plain Radial, with tapping attachment and gear box drive.
- 1-8 spindle Niles-Bement-Pond Boiler Plate Drill.

MILLING MACHINES

- 1-No. 3 LeBlond Plain, with 3-step cone, friction back gears.
- 1-No. 3 Cincinnati Vertical Milling Machine with single pulley drive.

PLANERS

- 1-36"x36"x14' American Pl. with 2 hds. on cross rail and 2 sp. countershaft.
- 1-42"x36"x26' American Planer with two heads on cross rail, two side heads, and two speed countershaft.
- 1-48"x36"x18' American Planer with two heads on cross rail, two side heads, and two speed countershaft.
- 1-48"x48"x26' American Heavy Pattern Planer with two heads on cross rail, two side heads, and two speed countershaft.
- 1-72"x60"x31' Pond Planer with two heads on cross rail and countershaft.

SHAPER

- 1-16" American Back Geared Crank with table support, cone pulley drive.

FLAT TURRET LATHES

- 1-No. 2 (2"x17") Warner & Swasey Flat Tur. Lathe, 3-step cone, friction hd.
- 1-2"x24" Jones & Lamson Flat Turret Lathe, with 3-step cone, friction hd.

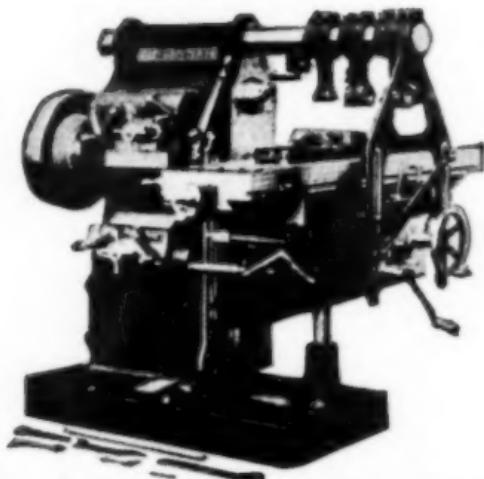
In addition to the above we have a number of miscellaneous tools that are exceptional "buys"

Many of the above tools have been used but very little, and are practically the equivalent of new machines. We repeat, there are many unusual and exceptional bargains in this list that somebody is going to get the benefit of. Write us immediately for descriptions, illustrations and prices, so you will be one of those to get the benefit of these bargains before they are gone.

The American Tool Works Co.

Cincinnati, U. S. A.

Builders of LATHES — SHAPERS — RADIAL DRILLS



1-SLIGHTLY USED No. 4 Cincinnati High Power Plain Miller,
rapid traverse, 90% new. New price \$4075. OUR PRICE \$1975.

Other Specials

BORING MILLS:

- 1-10"-16' Betts, heavy pattern, geared feeds, belt drive.
- 1-10"-16' Niles-Bement-Pond, latest type, motor drive.
(Both with Central Boring Heads)
- 1-16' Betts, friction feeds, cone drive, older style.
- 2-12' Betts, heavy duty, belt and motor drive.
- 1-12' Pond (Plainfield), friction feeds, belt drive, older style.
- 1-10' Niles, with friction feeds, cone drive.
- 2-96" Niles, friction feeds, cone drive.
- 1-96" Niles-Bement-Pond, quick change feeds, belt drive.
- 1-96" Bickford, belted feeds, motor drive.
- 1-84" Bullard, rapid traverse, quick change geared feeds, motor drive.
- 1-64" Gisholt, heavy pattern, rapid traverse, quick change, geared feeds, motor drive.
- 2-No. 2 and No. 3 Barrett, Horizontal Cylinder.
- 1-No. 21 Lucas, Horizontal, 2 $\frac{3}{4}$ " bar, variable speed motor drive.
Forging Equipment, Headers, Bulldozers, Upsetters and Hammers.

GEAR CUTTERS:

- 1-36" Schuchardt & Schutte Hobber.
- 1-No. 13 Brown & Sharpe spur and bevel gear cutter.

ENGINE LATHES:

- 1-60"x15' New Haven, triple geared, face plate drive.
- 1-50"x30' Pittsburgh, quick change, triple geared, face plate drive.
- 1-48"x24' Lodge & Shipley, single pulley, Reeves variable countershaft.
- 1-36"x32' Putnam, heavy duty, geared head.

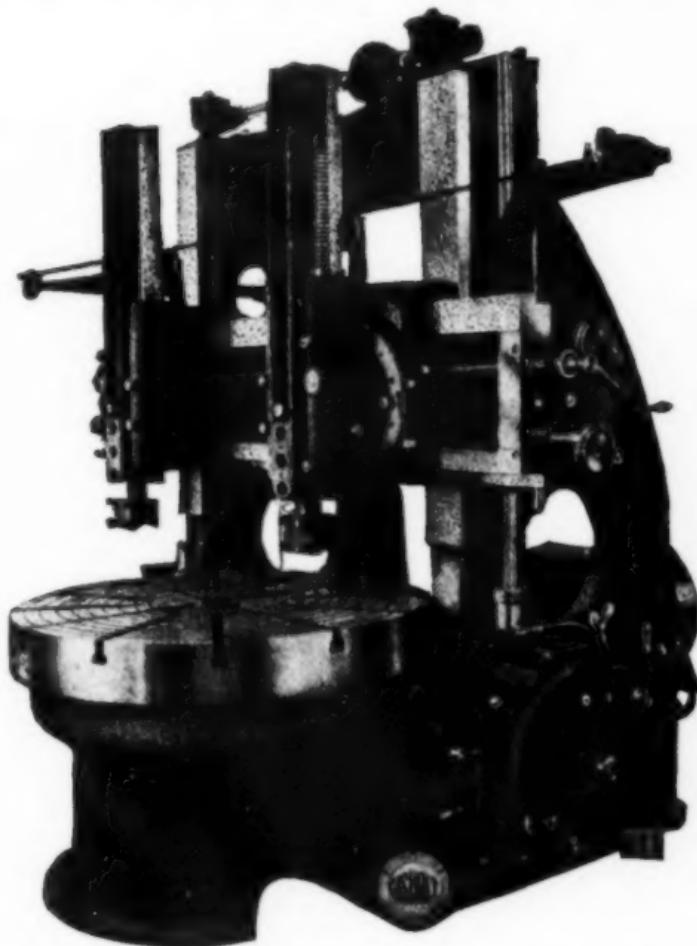
RADIAL DRILLS:

- 3' American, 3' Cincinnati-Bickford, 6' Dreses, 6' Baush.

DAVIS, HOY & STUMPF

149 Broadway, New York City

Another Special



1—SLIGHTLY USED 64" Gisholt Heavy Duty Vertical Boring Mill, 2 swivel heads, rapid power traverse, full quick change, including a 220 volt direct current variable speed motor and controller. Table is 60" in diameter by 7" thick. Exceptionally fine condition.

DAVIS, HOY & STUMPF
149 Broadway, New York City

FOR SALE SECOND-HAND LATHES

**24"x12' Boye & Emmes Gear Box,
Double Plate Apron.**

**24"x14' Boye & Emmes Gear Box,
Double Plate Apron.**

**24"x16' Boye & Emmes Gear Box,
Double Plate Apron.**

**22"x14' Greaves & Klusman, with
taper attachment and two
steady rests. In first-class
condition.**

**THE
Boye & Emmes Machine Tool Co.
2245 Spring Grove Ave.
CINCINNATI, OHIO**

NEW 3 PHASE MOTORS CHEAP. 3 H. P. \$57.50; 5 H. P. \$67.50

LATHES

9" to 13" Barnes, h. s., cp. r., new.
12" x 5' Cleveland, geared head.
14" x 8' Young.
14" x 6' Hamilton, grd. hd., motor dr.
14" x 6' Monarch, quick change.
14" x 8' Sidney, double back geared.
16" x 8' Sidney, double back geared.
18" x 10' American, quick change.

TURRET LATHES and
14" Tilted turret hand screw mch.
1" and 18" Mulholland.
2x24 & 3x36 J. & L. dbl. equipment.
No. 3-B Foster, 5" capacity, new.

14" Niles, traveling head.
14" Steptoe, crank.
16" American, tool room.

24" x 24" x 6' Gray.
32" x 32" x 8' Gray.

Nos. 3-A & 6-A Willard inclinable.
No. 1 Toledo inclinable.
Nos. 12, 2, 24 & 4 Robinson.

DRILLS and
3" Silver, sgl. pulley, gear box dr.
3 & 4" Morris plain gear box.
3" Canedy-Otto plain, new.
4" Universal Radial Drill Co. plain.
Electric drills, Black & Decker.

No. 2 Kempsmith universal.
U. S. and Whitney hand.
No. 25 Becker plain, power feed.
No. 3 Kempsmith univ. and plain.
Nos. 2-A & 4-B Becker vertical.

Nos. 1, 3 & 78 W. & M. surface.
No. 2 W. & P. 10x30 universal.
6" x 15" Fitchburg plain.
12x36 Cincinnati universal.
12x42" & 16" x 30" Landis plain.
12" x 73" Brown & Sharpe plain.
36" and 66" Yates plate.

MISCELLANEOUS

Band saw, metal, Klemm.
Band saws, Napier 4" x 4", 10" x 10".
Bending rolls, 7" for 8" plate.
Boring mill, Colburn No. 3, tur. hd.
Boring mill, 54" & 60" Colburn, 2 hds.
Brake, 10', 18-gauge metal.
Broaching machine, No. 3 LaPointe.
Cold saw, Burr. 3" capacity.
Compressors, 5x4, 8x8 and 12x10.
Drawing tables, adjust., 42" x 6' top.
Gear cutter, 26" No. 3 B. & S.
Gear millers, Bilton No. 1, (5).
Hammer, 40 lb. Bradley, helve.
Hammer, 150 lb. Standard drop.

18" x 8' Bradford, h. s., steady rest.
20" x 10' Prentice, taper.
20" x 10' Hamilton, rapid production.
24" x 24' Prentice, with raising block.
25" x 12' Sidney heavy duty.
25" x 8' Bridgeford, heavy duty.
Ames precision bench, 4" & 1" cap.
8x60" & 10x72" Fitchburg Lo-Swing.

SCREW MACHINES

6" Gridley auto., single spindle.
Nos. 52 and 56 National Acme.
4" P. & W. automatic, single spdl.
21" Gisholt.

SHAPERS

16" & 24" Barker, b. g. crank.
16" O. & S. b. g. crank, new.

PLANERS

36" x 36" x 18" Pond.
60x60x17' Betts, 2 heads.

PRESSES

Emco, bench, for radio parts.
No. 35 Niagara straight side.
Perkins, dbl. housing, wt. 4,000 lbs.
RADIALS

22", 24", 26", 28" and 32", sliding hd.
20", 24" & 26" Barnes, all geared.
4-spindle Sigourney sensitive.
4-spindle Reed sensitive.
Electric drills, Thor, all sizes.

MILLING MACHINES

No. 3 LeBlond, with vertical attach.
No. 2 H Brown & Sharpe plain.
Briggs type "A" high duty, 24x8 table.
No. 7 Becker Lincoln type.
Oesterlein 24x7x18 plain.

GRINDERS

Perfection cylinder.
No. 60 Heald cylinder.
Nos. 2 & 3 Ohio universal & tool.
No. 4 Gardner 20" double disc.
No. 20 Bryant, chucking.
B. & S. No. 24 dbl. spdl., cylinder.
Capital internal, new, 2" x 2".

Oil separator, Springfield.
Pipe machines, 2", 4", 6" & 12".
Pumps, Gould triplex, 6x8" & 7x8".
Punch & shear $\frac{1}{2}$ by $\frac{1}{2}$, 10" throat.
Riveting hammers, No. 3-A h. sp. (2).
Scale, 1500 lb. Toledo, dial type.
Sceleroscope, Shore.
Shear, 3' Robinson, for 10 gauge.
Shear, No. 20 Quickwork, 30" throat.
Shear, circular, Pettingell 60".
Slotted, 18" Bement-Miles.
Tapping mch., 4" Rickert-Shafer.
Tapping machine, Acme 6-spindle.
Threading mch., W. & P. 2-spindle.

**THE
OSBORNE & SEXTON
MACHINERY COMPANY
COLUMBUS OHIO**

DEPT. H.

Quitting Business

Everything for Sale — No Reservations

Air Compressor, belted, Chicago 9"x11", belt drive.
Air Compressor, steam driven Imperial 10, 2-stage Duplex 888 cu. ft., steam ends 12"x16"; air 19"x16" & 12"x16"; 90%.
Air Compressor, steam, Ingersoll-Rand, 1000 cu. ft. single stage.
Bending Rolls, Niles Pyramid Type, capacity 1" plate 12' wide.
Bending Rolls, No. 7 Bertsch, angle, power driven.
Bolt Cutter, Landis, single spindle, 1" capacity, with dies.
Bolt Cutter, Acme 2-spindle, 1" capacity, complete with dies.
Bolt Cutter, Landis 2-spindle, 1" capacity, with dies.
Boring Mills, Baush 60", 2-heads, screw cutting, cone driven.
Boring Mills, Bullard 36", New Era Vertical Turret Lathe, 85%.
Bull Riveter, 108"—63 ton, 1" capacity, Pedrick & Ayer.
Butt Welder, Federal 65 KW, 3-phase 60-cycle 440-volts.
Butt Welder, Winfield 20 KVA, 3-phase 60-cycle 440-volts.
Cutting-Off Machine, Hurlbut-Rogers, 4" capacity, 95%.
Cranes, Toledo 30' span; 2-5 ton and 1-7½-ton, 3-ph. 60-cyc. 440-volt.
Gear Cutter, Gould & Eberhardt 36", single vertical cutter.
Grinder, Diamond Heavy Face Grinder, 84", arranged motor drive.
Grinder, No. 60 Heald Cylinder Grinder.
Grinder, Norton plain 14"x72", standard equipment.
Grinder, Norton plain 10"x52", standard equipment.
Grinder, Norton 22"x34"x120", crankshaft.
Grinder, Bath universal No. 22.
Hydraulic Press, Metalwood No. 20 Forging.
Hydraulic Press, Defiance Rim No. 4, 60-ton.
Lathe, 24"x12" Whitcomb-Blaisdell, compound rest.
Lathe, 24"x10" Boye & Emmes, compound rest.
Lathe, 20"x10" Hendey, compound rest.
Lathes, 24"x12" American, 3-step cone, d. b. g., with chucks, 90%.
Lathe, 36"x18" Lodge & Shipley Patent Head, compound rest.
Lathe, 36"x18" Lodge & Shipley Heavy Duty Geared Head, motor drive.
Lathe, 36"x20' New Haven, compound rest, 5-step cone, cheap.
Lathe, Low-Swing 4"x108", two carriages, 90%.
Lathe, 28" swing Gisholt Turret.
Lathes, J. & L. 2"x24" and 3"x36".
Lathe, 18"x10" Boye & Emmes, 3-step cone, d. b. g., 90%.
Milling Machine, No. 3 Universal Cincinnati.
Pit Lathe, 84" swing, very cheap.
Radial Drill, 5' Prentice, with taper.
Radial Drill, 4' American, gear box drive, with tapping attachment.
Radial Drill, 4' Fosdick & Holloway, cone drive, tapping attachment.
Radial Drill, 3' Hammond, gear box drive, tapping attachment.
Shaper, 24" Queen City, very good condition.
Upsetter, Acme 1½", steel bed, will sell cheap.

Have a lot of Woodworking Machinery and Foundry Equipment: Electric Motors 5 to 50 h. p., 3-phase, 60-cycle, 220 or 440 volt; also large stock High Speed Twist Drills, Taps, Reamers, etc., new and used.

If what you want is not listed, write us, as we probably have it

Aultman & Taylor Machinery Co.

Manufacturers of Farm Implements

MANSFIELD, OHIO Phone—Canal 1261

LATHES

36"x22' Putnam, t. g., semi-q. c.
32"x12' Lodge & Shipley, q. c. g.
30"x16' Houston, Stanwood & Gamble, q. c. g.
27"x18' LeBlond hvy. duty, q. c. g.
28"x56"x14' Putnam q. c. g., sliding bed extension gap lathe.
24"x14' LeBlond, q. c. g.
22"x10' Hamilton, semi-q. c. g.

20"x8' Hendey, q. c. geared head.
20"x10' Bradford, standard change, heavy duty.
18"x8' Lodge & Shipley, q. c. g.
16"x8' Hendey, q. c. geared head.
16"x6' Monarch, q. c. g.
14"x8' Hamilton, q. c., tool room, with taper, collets, and relieving attachments.

TURRET LATHES

No. 3-A Warner & Swasey Univ. Hollow Hexagon Turret Lathe, grd. head.
No. 1-B Foster Univ. Hollow Hexagon Turret Lathe, geared head.
No. 6 Warner & Swasey Univ. Turret Screw Mch., frict. hd., cone pulley.
No. 4 Millholland Universal Turret Screw Machine, geared head.
13" Gisholt Turret Lathe, cone pulley.

MILLING MACHINES

No. 2 Cincinnati univ., cone pulley, complete.
No. 3-B Heavy B. & S. pl., sgl. pul.
No. 3 Cinti hi-pwr. pl., sgl. pulley.
No. 3 Cincinnati plain, cone pulley.
No. 3 Kempsmith pl., cone pulley.
No. 2-B B. & S. plain, sgl. pulley.

No. 2 Cincinnati plain, cone pulley.
No. 1-B Milwaukee (Kearney & Trecker) plain, single pulley.
No. 6 Whitney hand.
No. 2 Cinti hi-pwr. vert. sgl. pulley.
No. 5-C Becker vert., cone pulley.
28" Cinti semi-auto. duplex, belt dr.

RADIAL and UPRIGHT DRILLS

5' American Tool Works Plain Radial Drill, gear box.
4' Fosdick Plain Radial Drill, gear box, 95% new, very late type.
3' Western Plain Radial Drill, gear box drive.
2½' Cincinnati-Bickford Plain Radial Drill, gear box drive.
4' Hammond High Speed Sensitive Folding Arm Radial, belt drive.
26" Aurora Upright Drill Press, with tapping attachments.
26" Rockford Upright Drill Press.
24" Cincinnati-Bickford Upright Drill Press, gear box drive, tapping attach.
23" Rockford Upright Drill Press, with tapping attachment.
22" W. F. & J. Barnes Upright Drill Press.
20" W. F. & J. Barnes 4-spindle gang, with auto. approach and return feed.
14" Avey High Speed Ball Bearing Sensitive Drill Press.
2-spindle Allen High Speed Ball Bearing Sensitive Drill Press.

GRINDERS

No. 60 Heald cylinder, complete equipment.
No. 70 Heald internal chucking.
Capital internal chucking, collet att.
Rivett internal chucking.
No. 1½ Cin'ti univ. tool & cutter.

No. 3 Oakley universal too. room, power feed.
Universal Machine Co. universal surface, with power feed.
6"x18" Landis plain cylindrical.
No. 11 Brown & S. pl. cylindrical.

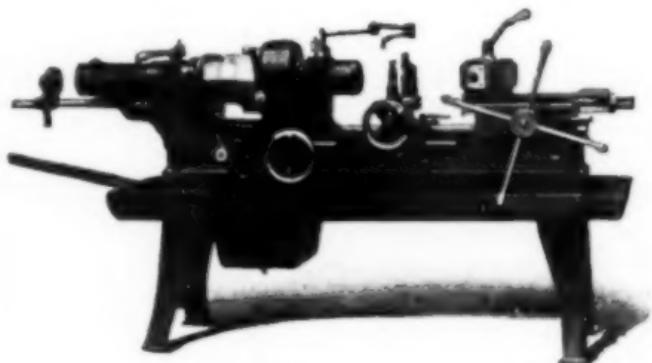
MISCELLANEOUS

Air compressor, 8"x8" Chicago Pneumatic, cap. 129 cu. ft. per min.
Arbor press, No. 5 Atlas, comp. grd.
Bolt cutter, 1" Landis, belt drive.
Boring mill, No. 21 Lucas, single pulley, 2½" bar.
Brake, 8" Robinson, hand power.
Brake, 8" Dries & Krump, power.
Broaching mch., No. 3-B LaPointe, late type, dbl. fric. pulley drive.
Gear cutter, No. 12 Brown & Sharpe auto. spur and bevel.
Gear cutter, 36" No. 4 Brown & S. auto. spur.
Gear hobber, 24" Schuchardt & S.
Hammer, 30" Bradley upright, compact rubber cushioned, belt dr.

Keyseater, No. 1 Davis, cap. 1/16"-1" Hammer, helve, 80 lb. Bradley, rubber cushioned.
Keyseater, No. 00 Baker, cap. up to 4" Pipe mch., 4" Jarecki, pwr., bt. dr.
Planer, 30"x30"x8' Gray, 1 hd., bt. dr.
Planer, 42"x36"x10' Am. T. Wks., 1 h.
Press, power forcing, 15-ton Lucas.
Press, No. 3½ Toledo, o.b.i., power.
Press, punch, No. 3-G Michigan, b.g.
Shaper, 16" Queen City, crank.
Shaper, 20" Wm. Barker, b. g. crank, brand new.
Shaper, 24" Wm. Barker, b.g., crank, brand new.
Shear, square, 36" Peck, Stow & W., foot power, 18 ga. and lighter.

And Many Others. Send for Our Complete List

EASTERN MACHINERY CO.
No. 408 East Pearl St. Cincinnati, Ohio



No. 4 W & S Geared Turret Lathe
with Auto. Chuck and Power Feed,
"As is" condition good..... \$600

Send for W & S List of Surplus Equipment

A few examples—

2-A 3½ Capacity, "As is"	\$ 1800.
No. 6 Turret Lathe, Power Feed to Turret and Cut-off "As is"	700.
No. 70 Heald Internal Grinder	825.
Elwell Parker Electric Truck	550.
12"x5' Hendey Lathe, full equipment	575.
No. 3 B & S Vertical Milling Machine	900.

**The Warner & Swasey Co.
Cleveland, Ohio, U.S.A.**

New York: Singer Building

Boston: Chamber of Commerce Bldg.

Philadelphia: 518 Springfield Ave.

Chicago: 618 Washington Boulevard

Milwaukee: 1143 Wells Building

San Francisco: 50 Fremont Street

Cleveland: 5701 Carnegie Avenue

Pittsburgh: Chamber of Commerce Bldg.

Buffalo: Iroquois Building

Detroit: 5928 Second Boulevard

Dayton: 518 Mutual House Building

LIQUIDATION SALE

Holmes Automobile Company, Canton, O.

- 2—No. 60 Heald Internal Grinders.
- 1—No. 33 New Britain Automatic 5-spindle, serial 6729.
- 1—42" x 20" x 20' Fixed Rail Slab Miller, Ingersoll.
- 1—2" Cleveland automatic Screw Machine, Class B, latest type, h. s. drilling attachment, Serial 29694, 95%.
- 1—5A Potter & Johnston Automatic, serial 20679, 90%.
- 5— 9" x 20" Porter & Cable Lathes.
- 2—21" Gisholt Turret Lathes.
- 3—Valve Grinders, Misch.
- 4—No. 6 Whitney Hand Millers.
- 3—No. 1 Kent-Owens Hand Millers.
- 1—No. 2 J. N. La Pointe Single Broaching Machines.
- 2—No. 3 Kempsmith Plain Millers.
- 2—24" Hoefer Sliding Head Drills, b. g., p. f., square tables.
- 4—16" Henry & Wright class K, double spindle B. B. Drills.
- 1—No. 17D Moline 4-spindle Hole Hog Drill, 20" swing.
- 2—4' Hammond B. B. Radial Drills with tappers.
- 1—No. 315 Baker High Duty Drilling Machine.
- 1—No. 2X Garvin Automatic Tapper.
- 1—No. 2 International Vertical Tapper.
- 1—No. I W. & S. Screw Machine, a. c., b. feed, p. f. turret.
- 2—1" Millholland Screw Machines, a. c., b. feed, h. f. turret.
- 1—2" Garvin Screw Machine, a. c., b. feed, p. f. turret.
- 1—24" x 8' Bridgeford Chucking Lathe, with hex. turret.
- 1—16" x 6' Fulton Lathe, compound rest.
- 1—20" x 8' Whitcomb-Blaisdell Lathe, q. c. g., compound rest.
- 1—15" x 6' Sidney Engine Lathe, p. f., turret on shears.
- 1—No. 14 Brown & Sharpe Plain Grinder.
- 1—No. 2 Bath Universal Grinder.
- 1—No. 103 Rivett Internal Grinder.

Electric Japan Oven 12' x 20' x 8' 6", with conveyor 70' centers; Hanna Yoke Riveter; Vises; Belting; and many other machines not mentioned.

*Write or call at plant for prices and other information.
Private sale will continue until all equipment is sold.*

Holmes Automobile Company

Liquidation Department

Canton, Ohio

Special Offerings—

American 4' Radial Drill, motor driven.....	\$1150.
Morris 2½' Radial Drill, s. p. d.....	450.
Burke No. 22 Bench Drills, brand new.....	25.
Henry & Wright single spindle b. b. Drill.....	125.
Allen 2-spindle ball bearing Drill.....	250.
Demco 3-spindle ball bearing Drill.....	400.
Allen 4-spindle ball bearing Drill.....	475.
Hollingworth 18" Shaper, brand new.....	750.
Gould & Eberhardt 14" Shaper.....	450.
Milwaukee 16"x6' Lathe.....	250.
Walcott 16"x8' Lathe, q. c. g.....	525.
Davis 14"x5' Lathe, q. c. g.....	450.
Cincinnati No. 3 Universal Miller, dividing head.....	1250.
Gray 24"x24"x8' Planer, single head.....	750.

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Desirable Machines

With a good-as-new money-back guarantee

- No. 12 Barber-Colman Hobbers.
- 20" Steptoe Shaper.
- Oakley Tool & Cutter Grinder (New).
- 4' American Sensitive Radial.
- 4' Western Radial.
- No. 22 Natco Drill.
- 36" Colburn Heavy Duty.
- No. 28 Ohio Plain Miller.
- 10"x36" Norton Plain Grinder.
- 36" Besly Disc Grinder.
- 24x24x6' Powell Planer.
- 2½-3¼ Cleveland Model A Automatic

Mid-West Machine Tool & Supply Co.

321-323 W. Fourth Street,

Davenport, Iowa

FOR SALE BY
The Co-Operative Machinery Co.
621 Engineers Bldg., Cleveland, O.

Drill Press, used 10" Winterhoff bench, $\frac{1}{2}$ " capacity	\$ 35.
Drill Press, 2 spdl. ball bearing Allen, good condition.....	225.
Gear Cutter, used D. E. Whiton semi-automatic,.....	395.
Grinder, used Detroit Centerless	300.
Grinder, used Capital Internal,.....	250.
Lathes, three Porter-Cable Mfg., very excellent cond., ea.	295.
Lathe, 14"x6' used Porter Engine Lathe.....	150.
Lathe, used Woods Model C Tilted Turret, plain head, power feed to turret, with 10" Barker wrenchless chuck.....	375.
Lathe, used 13"x8' Willard, double back gear, fine cond.....	225.
Lathe, new 9 $\frac{1}{2}$ "x24" Sundstrand Mfg., gear drive.....	585.
Miller, used No. 2 LeBlond heavy duty Plain	590.
Miller, new No. 1 $\frac{1}{2}$ Rockford Plain	950.
Millers, used U. S. Hand Millers, good condition..... each	120.
Planer, used 30"x30"x6' Gray, 1 head on rail	550.
Screw Machine, used No. 1 Garvin Plain, practically new....	195.

No. 55 National Acme Automatic, serial No. 9293, equipment would include cut-off tool, forming tool, set of cams, set of pads and feed shells, motor driven with 5 H. P., 3 phase, 440 volt, Robbins & Meyers Motor.

No. 55 National Acme Automatic, ditto, serial No.	9290
No. 55 " " " "	9606
No. 55 " " " "	10144
No. 55 " " " "	7448
No. 55 " " " "	9069
No. 55 " " " "	7445

No. 515 National Acme Automatic, motor driven, with 3 H. P. Western Electric Motor, 440 volt, 1800 r. p. m., serial No. 6890, driven with 5 H. P. Robbins and Meyers Motor, 440 volt.

3—Model "A" Cleveland Automatics, used only 60 hours, absolutely like new, complete with all regular equipment.

1—Model "B" Cleveland Plain, serial No. 28034.

No. 53 National Acme Automatic, serial No. 10109, motor driven with 5 H. P. Robbins and Meyers motor, 440 volt.

National Acme Bolt Threader, two spindle, with two No. 36 die hds.

Semi-automatic Drill, 3/16" capacity, made by the Auto Sensitive Machine Co.

No. 2 Globe Tapered Hexagon Horizontal Tumbling Barrel, 13 $\frac{1}{2}$ " diameter x24" long, with 8" hand hole.

1—Baush Multiple Spindle Drill, 12 spindles, drills up to 42" circle, No. 4 M. T. in spindle, in fine condition.

POWER PRESSES FOR SALE

TOGGLERS

Nos. 1½, 3½ & 4A Bliss.
Nos. 166, 168 & 169½S Toledo.
Nos. SA175, 184 & 953.
Ferracute, Double Crank, 72" to
112" between uprights.

STRAIGHT SIDE

Nos. 54, 55 & 55½ Toledo.
Nos. 74 & 75½ Bliss.
No. 54G Garrison.
Nos. E5, D73 & D54 Ferracute.

DOUBLE CRANKS

No. 4B Bliss 42", M. D.
No. 6J Standard, 44" M.D., new
No. 165S Consolidated, 41" Fly.
No. SG86 Ferracute, 64" Grd.
No. SG87 Ferracute, 99" Grd.
No. SG79 Ferracute, 100" Grd.
No. SRG102 Ferracute, 40" Grd.
No. SRG104 Ferracute, 58" Grd.

Fine Selection in the Country

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Inclinable

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No. 5 Toledo, geared 5" stroke, weight 4000 lbs.
No. 4 Toledo, 2½" stroke, weight 3000 lbs.

Straight Side

No. 62 V. & O. geared, 6" stroke, weight 6600 lbs.
No. 6 Rockford geared, 7" stroke, weight 6000 lbs.
Perkins Double Crank, 34" bet. uprights, wt. 4200.
10" Ohl Power Brake, 10 gauge capacity.

142 Other Presses—Low Prices

J. N. MOYER

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Over Three Hundred Items In Stock for Your Selection

A Few of the Larger Tools:

60" Betts Vertical Boring Mill, 2 heads.	\$1000.
42" Bullard Vertical Mill, 2 heads.	800.
26"x26' Niles Lathe, single back gear.	
24"x24' Niles Lathe, single back gear, hollow spindle	375.
26"x12' Lodge & Davis Lathe, solid spindle.	425.
30"x11' Pond Lathe, triple geared, cone drive, arranged for motor.	360.
30"x12' Lodge & Davis Lathe, cone drive	875.
36"x16' Finfield, single back gear, 24" chuck.	1050.
40"x16' Niles, triple geared, quick change, with Motor, nearly new	1150.
46"x18' New Haven, triple geared, blocks to 62"	1250.
42"x20' Niles, triple geared	1450.
44"x24' Niles, triple geared	1650.
48"x28' Niles, triple geared	325.
24" Gisholt Turret Lathe, fine condition	395.
28" Gisholt Turret Lathe, fine condition	650.
54" Niles Horizontal Boring Mill, 4" bar	950.
54" Niles Full Universal Radial	1250.
68" Niles Full Universal Radial	

LATHES

13"x 8' Willard, compound rest	\$ 275.
13"x21"x8' NEW Willard, gap type, regular price \$765, our price	520.
14"x 8' Carroll-Jamieson, quick change, fine condition	325.
14"x 8' Monarch, quick change, nearly new	325.
16"x 6' Hendey, overarm, quick change	550.
17"x 6' National, quick change	250.
19"x 6' Fay & Scott, loose change	285.
20"x20' Hamilton, quick change	475.

MILLING MACHINES

No. 2-B Brown & Sharpe, sgl. pulley dr., vertical attach.	\$ 735.	No. 5 Brown & Sharpe plain..	\$ 595.
No. 3 Brown & Sharpe plain..	455.	No. 2 Brown & Sharpe univ...	470.
		No. 4 Cincinnati, old st. univ.	395.

DRILLING MACHINES

24" Hoefer, 2-spindle, nearly new.	\$ 285.
22" Barnes, back gear, power feed, with 220 volt, a. c. Motor.	155.
42" Bickford Radial, single pulley.	535.
28" Aurora, sliding head, back gear, power feed	230.
28" Aurora, sliding head, back gear, power feed, tapping attach.	285.
30" Cincinnati-Bickford Radial, tapping, excellent condition, late type.	800.

PLANERS

16"x18"x48" Hendey	\$ 245.	24"x24"x 6' Gray, fine shape ..	\$ 645.
36"x36"x12' Woodward & P. 1 head	685.	32"x32"x20' Cincinnati, 2 hds.	

SHAPERS

14" Rockford cr., nearly new	\$ 250.	16" Hamilton heavy duty.....	\$ 395.
16" Stockbridge crank	245.	20" Queen City b. g. crank...	595.

A Real Special for Quick Sale

2" Acme Bolt Cutter, with right and left dies and taps, complete with 220 volt, a. c., 3-phase, 60 cycle Motor. Write for full particulars.

**BOILERS, ENGINES, COMPRESSORS, PUMPS, PUNCHES,
SHEARS, VISES, LEATHER BELTING, Etc., Etc.**

Norton-Broadway Machinery Co.

238 Broadway, Cincinnati, Ohio

LIQUIDATION

Of The Hamilton Machine Tool Company's equipment will continue until every item is sold. Many good bargains remaining in

Engine Lathes—From 14"x6' to 40"x16'.

Metal Planers—All sizes from 24"x24"x6' to 72"x60"x32'.

Upright Drilling Mches.—8" & 16" Sen., 24", 32" & 36" Sl. Hd., bk. grd. Radial Drills—5' Fosdick, 5' and 6' Hamilton.

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Automatic Gear Cutting, Hobbing and Shaping Machines—No. 1 Farwell, No. 3—26" B. & S., 36" G. & E., 36" Fellows.

Screw Machines and Turret Lathes—Acme, National Acme, Jones & Lamson, Garvin and Gridley, each in several sizes.

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BRANCHES: INDIANAPOLIS, IND. HAMILTON, OHIO, DAYTON, OHIO,
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COLD HEADERS Rivet and Bolt Machinery

1—Waterbury Farrell Single Stroke No. 11 Header.

1—Waterbury Farrell Single Stroke No. 4 Header.

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6—Economy Automatic Shavers.

1—Economy Automatic Pointer.

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Headers are NEW, balance of equipment fine condition

Can be inspected and demonstrated

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Used but rebuilt
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26-48" swing, 10' bed.
32-54" swing, 14' bed.
26-48" swing, 16' bed, large pl. face
plate. Price f.o.b. New England.
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USED "2-in-1" LATHES

McCabe—Former Pattern

24-40" swing, 10' bed.
26-44" swing, 10' bed.

NEW "2-in-1" LATHES

12-ft. to 32-ft. Beds

BIG LATHE

66" swing, 42' bed, Putnam triple
geared, arranged for motor drive.

A fine tool for the Big Shop
requiring equipment of
the better kind

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14" sw., 8' bed, Sidney, q. c.
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18" sw., 10' bed, McCabe, q. c.
18" sw., 12' bed, Schumacher & B.
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24" sw., 14' bed, Reed-Prentice.
26" sw., 14' bed, Niles-Bement-P.
32" sw., 20' bed, McCabe, q. c.
42" sw., 16' bed, McCabe, geared
head, quick change.
50" sw., 20' bed, Pond.
50" swing, 24' bed, Bement-Miles,
triple geared.
60" sw., 28' bed, Wickes.
84" sw., 46' bed, Putnam, motor-dr.
110" swing, 42' bed, Bement-Miles,
5" blocks.

LARGE BORING MILL

96" sw., Niles Vertical Boring and
Turning Mill, 2 swivel heads,
table 68" diam., 54" height, under
tool. Double box cored housings,
cone-drive. Rated A1.

PLANERS

84" x 60" x 30' Pond, 4 heads.
72" x 72" x 24' Niles, 4 heads.
54" x 54" x 12' Pond, 4 heads.
48" x 48" x 15' Pond, 2 heads.
36" x 36" x 12' Gray, 2 heads.
26" x 26" x 6' Niles, 1 head.

A FEW OF THE OTHER BARGAINS

16" stroke, Smith & Mills Shaper.
18" stroke, Ohio Shaper.
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No. 15 Bliss Press.
26" Espen-Lucas Cold Saw.
"IM" Q. & C. Cold Cut-Off Saw.
25 lb. Dupont Hammer.
50 lb. Little Giant Power Hammer.
50" Bullard Boring Mill.
42" Baush, motor drive.
No. 3 Baker Keyseater.
24" arm Radial Drill, speed box.
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8x30 Modern Cylinder Grinder.
21" Turret Lathe, Gisholt Gap.
3x36" Jones & L. Turret Lathe.
Horizontal & Vert. Newton Miller.
48" bar, Bement-Miles Horizontal
Boring Mill.
18" throat Long & A. Double End
Punch and Shear.
42" throat Perkins Punch.
50" throat McCabe Punch & Shear.
60" throat H. & J. Horiz. Punch.
10' McCabe Rolls, drop end.
14" Acme Bolt Cutter.
3-Hack Saws.

MANY OTHER LARGE TOOLS—

of the kind rarely found on the Used Machinery Market.

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J. J. McCabe Lathe & Machinery Corp'n
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Of installing a Radial Drill? If so, the following machines are REAL bargains:

- 1— $2\frac{1}{2}'$ Standard type, heavy duty, MUELLER radial drill, gear drive.
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Prices will arouse interest

Write and Satisfy yourself

The Mueller Machine Tool Company

Radial Drills and Lathes

ESTABLISHED 1902

CINCINNATI, O.

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THIS MONTH

All Tools Guaranteed and Tested

- 1 Cincinnati Horizontal Production Milling Machine, with adjustable head and tail stock, $4\frac{1}{2}$ ft. table. Guaranteed like new.....\$650.00
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- 1 Pratt & Whitney Hand Screw Machine; takes up to $\frac{1}{2}''$ stock\$125.00

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Good Lathes, Planers, etc.—All Kinds of Tools

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SIMMONS GUARANTEED Machine Tools

Tested before shipment, and supplied with standard equipment as furnished by manufacturer when new

UNIVERSAL MILLING MACHINES

- 2—No. 2 Cincinnati Univ. High Power, all geared, arranged for motor dr.
- 3—No. 3-S Cincinnati Universal, motor drive, table 56" x 12".
- 2—No. 3 Cincinnati Universal, high power, table 52" x 12".
- 2—No. 3 Kempsmith Universal, double back geared, 3-step cone. 3 $\frac{1}{2}$ " belt.
- 1—No. 2 $\frac{1}{2}$ Rockford Universal, double back geared, table 58" x 11 $\frac{1}{2}$ ".
- 2—No. 2 Cincinnati Universal, double back geared, table 46" x 10".

PLAIN MILLING MACHINES

- 5—No. 2-B Milwaukee Double Arm, table 60x13".
- 2—No. 2-B Milwaukee Double Arm, table 47x13".
- 1—No. 2-B Milwaukee, with vertical attachment, table 48 $\frac{1}{2}$ x11 $\frac{1}{2}$.
- 3—No. 2 Cleveland, single pulley drive, table 50x13.
- 3—No. 1 Cleveland, single pulley drive, table 50x12.
- 2—No. 1 Cleveland, single pulley drive, table 44x12.
- 2—No. 2 Rockford, double back geared, table 50" x 11 $\frac{1}{2}$ ".
- 1—No. 3-B Brown & Sharpe, single pulley drive, table 57" x 15".
- 1—No. 2-B Hendey, single pulley drive, table 56x12.
- 1—No. 3 LeBlond, double back geared, table 53x12.
- 1—No. 3 Brown & Sharpe, cone drive, table 66" x 14 $\frac{1}{2}$.

VERTICAL MILLING MACHINES

- 3—No. 3 Cincinnati High Power Vertical, all geared, power rapid traverse, motor drive, table 59x13 $\frac{1}{2}$.
- 1—No. 4 Cincinnati High Power Vertical, all geared, power rapid traverse, motor drive, table 68" x 16 $\frac{1}{2}$ ".
- 2—No. 15 Garvin Vertical, equipt with three spindles.
- 1—No. 5 Brown & Sharpe Vertical, cone drive, table 64" x 15".
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- 1—No. 6-C Becker, cone drive, table 49x18.
- 2—24" x 24" x 20' Ingersoll, Planer Type, five heads, motor drive, equal new.
- 2—36" Continuous, 2 spindles, motor drive.

The above is a list of Milling Machines in our own stock **NOW** at our New York, Albany and Buffalo Warehouses. Of course we have Automatics, Boring Mills, Grinders, Hammers, Keyseaters, Lathes, Presses, Punches, Planers, Rolls, Shapers, Slotters, Upsetters, etc.

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in good condition—at a fair price

Cutter & Tool, No. 1 LeBlond.
Cutter & Tool, 24" Ingersoll.
Double Disc, 18" Ney.
Double Disc, 20" Ransom.
Cylinder, Plain, 10"x24" Landis.
Plain, 14"x50" Norton.
Crank Shaft, 16"x52" Landis.
Plain, 16"x72" Landis, with motor.
Universal, No. 4 Landis.
Tool Room, No. 1 Bath.
Hole, No. 6 Bryant.
Ring, Vertical, 8" Heald.
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Face, 30"x84" Diamond, with motor.

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REAL BARGAINS—*Write or Wire Us for Details*

Boring Mill, 3A universal horiz.
Drill Presses, hi. spd. 1, 3 & 4 sp.
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Gear Shaper, No. 6 Fellows.
Grinder Plain, 7½x72" B. & S.
Grinder Plain, 12x36" Cincinnati.
Grinder Plain, 10x48" B. & S.
Grinder Plain, 6x15" Ott.
Gr. Chucking, No. 18 Bryant inter.
Grinder Internal, No. 75 Heald.
Radial Drill, 3' American sensitive.
Lathe, 1½x6' Willard, d. b. g.
Lathe, 15x6' Champion, d. b. g.
Lathe, 16x8' Greaves-K. s. b. g.
Lathe, 17x6' Champion, d. b. g.
Lathe, 18x8' LeBlond, s. b. g.
Lathe, 18x8' Lodge & S., grd. hd.
Lathe, 20x10' LeBlond, d. b. g.
Lathe, 20x10' Greaves-K., d. b. g.
Lathe, 24x12' S. & B., d. b. g.
Lathe, 24x16' LeBlond extra hvy.
Lathe, 30x12' Greaves-K., d. b. g.
Lathe Turret, 20" Acme pwrl. fd.
Lathe Flat Turret, 2½x26" Acme.
Lathe Flat Turret, 3½x36" Acme.
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Miller Plain, No. 1 Cinti. bk. grd.
Miller Plain, No. 1½ Cinti. bk. grd.
Miller Plain, No. 2 Kempnith, b. g.
Miller Plain, No. 24 Oesterlein, b. g.
Miller Plain, No. 0 Steptoe bk. grd.
Miller Univ. No. 29 Oesterlein com.
Planer, 22x22x6' one head.
Planer, 30x30x10' Cinti., 2 heads
Planer, 36x36x18' Cinti., 4 hds.
Planer, 36x36x10' Gray, 2 hds.
Planer, 36x36x10' Am., 2 hds.
Planer, 42x36x16' Cinti. 4 hds.
Screw Mche. Hand, 1" Stenotype.
Screw Mche. Hand, 1" P. & W.
Screw Mche. Auto., " Cleveland.
Screw Mche. Auto., " Cinti. 5 sp.
Screw Mche. Auto., " Cleveland.
Screw Mche. Auto., 2½" Cleveland.
Screw Mche. Auto., 3" Gridley.
Screw Mcches. Auto. Nos. 52, 55,
56, 4 spindle National Acme's.
Screw Slotter, Brown & Sharpe.
Tapper, Webster & Perks 5 spidle.

*CINCINNATI AUTOMATIC MACHINE CO., Cincinnati, Ohio

Brown & Sharpe Universal 3-A Heavy, 80%	\$ 875.
Warner & Swasey No. 6 Turret Lathe, 85%	575.
Cincinnati-Acme 3½"x36" Turrets, 85%	575.
Libby 18" Turret Lathes, (4), 80-85% each	1025.
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Becker No. 6 Vertical Miller, 80%-85%	950.
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Sellers 15" Slotter, 75-80%	525.
Porter Lathe 20"x10' Loose Gear, 75-80%	275.
20 Tumbling Barrels 20"x40", Per Set	300.

75 PRESSES
and
Hundreds of Other Machine Tools
In Stock

D. C. OVIATT & CO.

1102 St. Clair Avenue,

Cleveland, Ohio

1—MORRIS 4' Plain Radial Drill with motor on arm, practically new, including motor and starter	\$2450.
1—MORRIS 18"x10' quick change, 3-step cone, dbl. bk. grd. Lathe, with taper attachment, first class condition.	1000.
1—MOKRIS 16"x8' qk. ch., Grd. Head Lathe, can be arranged for motor or countershaft drive, practically new.	1100.
1—MOKRIS 22"x10' 3-step cone, d.b.g., semi-qk. ch. Lathe, A-1	950.
1—LeBlond 24"x12' quick change, 3-step cone, double bk. grd. Lathe, with belt shifter, first class condition	1150.
1—Bickett 42"x42"x20' 2-hd. Planer, arr. for mtr. dr., including a variable sp. 20 h.p. mtr., 220 v., d. c. Has never been used.	5000.
1—Warner & Swasey Hand Screw Machine, cone drive, back geared, with oil pump, first class condition	300.
1—Dresses 1" cone dr. Hd. Screw Mch., oil pump & collets, A-1.	200.
1—18"x8' Chard 3-step cone semi-qk. ch. Lathe, good cond.	500.
1—14"x26' Monarch cone drive d. b. g., q. c. Lathe, good cond.	175.
1—4"x30" wide Faced Grinder, first class condition	250.
2—Lincoln Millers, Type 10, rapid traverse to table, good, ea.	300.
1—Steptoe No. 9 Milling Mch., cone fd., first class condition	300.
1—Hoefer 23" 2-spdl. Gang Drill, grd. fd., squared tables, A-1.	300.
1—Webster & Perks 5-spdl. Nut Tapper, first class condition	200.
1—MORRIS Horiz. Drilling & Boring Mch., t. a., pract. new	1500.
1—Thompson Elec. Butt Welder, Type 6, 230 v., sgl. ph., A-1.	900.
2—1" 4-spdl. Gridley Automatics Nos. 2997 & 2765, with extra equipment, good condition, each	500.
2—18" 4-spdl Gridley Autos. Nos. 6102 & 6103, extra equip., good cond., arr. for motor dr., including 5 h.p., a.c., 220 v. mtr., ea.	850.
1—18" 4-spdl. Gridley Automatic, pract. new, extra equip. arr. for motor drive, including 7½ h. p., a. c., 220 v. motor	1500.

The Morris Machine Tool Co., Cincinnati, Ohio

Good Used Tools

2 Spindle (12" overhang) ALLEN H. S. B. B. Drill Press.

4 Spindle (12" overhang) ALLEN H. S. B. B. Drill Press.

12"x5' VERNON Q. C. G. Lathe with taper, like new.

20"x10' MONARCH Q. C. G. Lathe.

3½"x60" LO-SWING Lathe.

Type B BRIGGS Milling Machine—34" feed.

Type B BRIGGS Milling Machine—42" feed.

No. 2-B MILWAUKEE Universal Miller, complete equipment.

72"x56"x14' GRAY Planer, 2 heads.

Stocker-Rumely-Wachs Co.
117 N. Jefferson St., Chicago, Ill.

BARGAINS

Upsetter, 11 $\frac{1}{2}$ " Acme, steel bed.
Ingersoll, Planer Type Millers, all sizes.
Radial Drill, Western 5".
Bolt Cutter, all sizes, Acme, National and Landis.
Toggle Press, Toledo No. 268 $\frac{1}{4}$, weight 175,000 lbs.
Press, Toledo No. 95.C, weight 48,000 lbs.
Press, Toledo No. 169 $\frac{1}{4}$, 26" stroke.
Press, Bliss Double Crank, No. 8.A.
Toggle Drawing Press, Bliss No. 14.B.
Press, Toledo No. 58 $\frac{1}{2}$, weight 40,000 lbs.
Hendey Lathes, Geared Head, Motor Drive, tapping attach., 16"x6'.
American Lathes, Geared Head, Motor Driven, tapping att., 16"x8'.
Libbey Lathes, 18", Air Chucks, A-1 condition, cheap.
Cutting-Off Machine, Hurlburt-Rogers, 4" & 5" capacity.
48x48x14 Woodward Powell Planer.
48x48x14 Cincinnati Planer.
Boring Mills, King 42" and 52" King, motor driven.
Boring Mills, 54" Bullard, motor drive.
Boring Mill, 60" Baush, A-1 condition.
Grinders, Landis 16x48 and 16x68, like new.
Openside Planer, 36x36x10' Detrick & Harvey.
Punches and Shears, all sizes.
Lennox Rotary Shear, 1" capacity.
Traveling Cranes, all sizes.
36" Oliver Band Saw—like new.
48"x48"x14' Gray Planer, three heads, belt drive.
36"x36"x10' Pond Planer, three heads, belt drive.
36"x36"x10' Gray Planer, three heads, belt drive.
Shaper and Milling Machine, Morton, cap. 70" horizontal travel,
48" vertical travel, 60" spindle travel.
Gear Planer, Gleason, cap. 10' Spur Gears, motor driven.
Boring Mill, Horizontal, No. 770 Niles, vertical travel 30", spindle
travel 75", 5 $\frac{1}{2}$ " bar; will bore hole 6" long with variations
less than .003".

Six Hundred Additional Machine Tools in Stock

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D. M. Osborne Machinery Company

P. O. Box 853, Station "H"

Cleveland, Ohio

ReMANUFACTURED -(ORIGINATED BY US)- MACHINE TOOLS

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In our stock we have more than 2000 high grade machine tools ready for immediate delivery. All are bargains and every one is guaranteed. Write for our latest complete "Green List" and prices.

LATHES

- 2-12" x 5' Willard.
- 2-14" x 6' Rockford.
- 1-14"-16" x 8' Lodge & Shipley.
- 5-18" x 8' Boye & Emmes.
- 30-20" x 8' American.
- 14-20" x 8' LeBlond.
- 5-20" x 12' American.
- 5-20" x 16' American.
- 20-21" x 10' LeBlond.
- 10-24" x 11' Cisco.
- 3-24" x 12' Providence.
- 1-24" x 15' Chard.
- 1-24" x 24' Lodge & S. selective hd.
- 7-25" x 10' LeBlond.
- 10-25" x 12' LeBlond.
- 24-26" x 10' Canada.
- 10-26" x 18' Bridgetford.
- 18-32" x 12' Pittsburgh.
- 1-36" x 18' Putnam geared head.
- 4-36" x 30" Pittsburgh Geared Hd.
- 3-36" x 37" Niles Bement Pond.
- 1-51" x 20' LeBlond.
- 1-56" x 64" x 18' Johnston.
- 1-60" x 18' Johnston.

MILLERS

- 2-No. 1B Milwaukee.
- 5-No. 2 Kempsmith.
- 3-No. 2 Rockford.
- 2-No. 28 Ohio.
- 6-No. 2-B Hvy. Brown & Sharpe.
- 4-No. 3 Kempsmith.
- 9-No. 3-B Hvy. Brown & Sharpe.
- 1-No. 3B Milwaukee, Universal.
- 2-No. 4 Cincinnati.
- 2-No. 4 LeBlond.
- 3-No. 4-B Becker.
- 2-No. 3 Cincinnati Vertical.
- 2-No. 4 Cincinnati Vertical.
- 4-No. 5-C Becker.
- 3-No. 6 Becker.

BORING MILLS—Vertical

- 2-24" Bullard "New Era."
- 1-42" Gisholt.
- 1-44" Niles Bement Pond.

BORING MILLS—Vertical—Cont.

- 1-48" Gisholt.
- 3-52" King.
- 1-54" Bullard.
- 2-62" King.
- 3-72" Cincinnati.

BORING MILLS—Horizontal

- 3-3" Foote-Burt.
- 1-No. 3A Universal.
- 1-No. 3 Rochester Floor Borer.

DRILL PRESSES

- 1-20" Barnes all geared.
- 1-34" Barnes.
- 1-36" Snyder.
- 1-No. 24 Foote-Burt.
- 1-No. 25 Foote-Burt.
- 6-No. 23 2-spdl. Henry & Wright.
- 1-3-spindle Henry & Wright.
- 4-6 spindle Alien.

PLANERS

- 1-24" x 24" x 6' American.
- 1-24" x 24" x 6' Liberty.
- 2-36" x 36" x 10' Bickett.
- 1-36" x 36" x 12' Woodward & P.
- 3-36" x 36" x 18' Cincinnati.
- 3-42" x 42" x 10' Gray.
- 1-72" x 56" x 36" Cincinnati.

GRINDERS

- 3-6" x 18" Landis.
- 12-10" x 36" Norton.
- 3-10" x 72" Norton.
- 3-12" x 26" Modern.
- 11-14" x 56" Norton.
- 1-16" x 72" Norton.
- 1-18"-30" x 96" Norton Gap.

PRESSES

- 2-No. 4 Walsh.
- 1-No. 32 Toledo Solid Back.
- 1-No. 34 Toledo Solid Back.
- 1-No. 74^{1/2} Bliss Geared.
- 1-No. 75^{1/2} Bliss Geared.
- 1-No. 93-A Toledo Double Crank.
- 1-No. 94-F Toledo Double Crank.
- 1-No. 68 Stoll Geared.
- 1-No. 87 Bliss Geared.

Our Guarantee: Your money back if you return a machine within thirty days, freight prepaid.

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HMTB5-I-HTG

LARGEST STOCK IN THE EAST

New and Used High Grade Modern MACHINE TOOLS

Guaranteed At Prices to Net You a Worth While Saving

BORING MILLS

- 4—Bullard 24" New Era type, vert.
- 1—Bullard 61" maxi-mill.
- 2—Nites-Bement-Pond 52", vert.
- 1—Landis No. 35 horiz., floor type.
- 1—Gisholt 72" vertical, 2 heads.

DRILLS—Upright and Radial

- 12—New 24" Sibley upright.
- 1—Minster D-3, heavy duty.
- 1— $\frac{1}{2}$ " Mueller Radial, S. P. D.
- 1—Foote-Burt 44", 4-spindle, rail.
- 2—New Turner No. 3, vert. turret.
- 1—N.-B.-P. 96" Ridgeway, motor drive, plain radial.
- 1—Western 6", plain radial.
- 1—Bausch 6".

DRILLS—Multiple Spdl., Rect. Head

- 1—Natco No. 14, q. c. g.
- 1—Natco No. 30, 12 spindle.
- 2—New Bausch No. 3, 21 spindle.
- 1—New Bausch No. 4, 56 spindle.
- 1—Fox, 6 spindle.

PLANERS

- 2—Putnam 26x26x8", 2 heads.
- 1—Woodward & P. 36x36x12", 4 hds.
- 1—Putnam 48"x48"x12", 2 hds., m.d.
- 2—Cleveland's 36x36x8 opens'e, NEW.

LATHES

New Star Lathes, all sizes with all attachments.

- 12—New South Bend 16x8 and 18x8 gap; 21x14.
- 10—New South Bend 18x5.
- 2—Hendey 20x7, geared head.
- 2—Hendey 14x6, with taper.
- 1—Walcott 26x14, 6", q. c. g.
- 1—Johnson 30x12, motor dr.
- 1—Bridgeford 36"x42" (raised to swing 60").

GRINDERS

- 1—Blanchard No. 10, motor driven.
- 1—Springfield-B., 12x12x48 vert.
- 1—Brown & Sharpe No. 14 plain.
- 16—Cincinnati No. 2, 12x36.
- 4—Norton 6x32 & 2—Norton 10x36.
- 1—Fitchburg 12x54.
- 1—Norton 16x36.
- 4—Heald Nos. 60, 65 & 70.
- 2—Heald rot. sur. Nos. 210, 255.
- 1—Blanchard No. 16, motor dr.

SHAPERS and SLOTTERS

- 3—New 16" Davis, s. p. d.
- 1—American, 28".
- 1—Newton 10" slotter.
- 1—Pratt & Whitney 10" slotter.

MILLERS—Plain, Mfg., Univ. & Vert.

- 1—Brown & Sharpe No. 2 plain.
- 1—Milwaukee No. 3-B universal.
- 1—Milwaukee No. 14-B vertical.
- 1—New Rockford No. 24 universal.
- 1—Cincinnati No. 2 univ., s. p. d.
- 2—Briggs type B.

- 2—Taylor & Fenn vertical.
- 1—Becker No. 4B and No. 8C vert.
- 1—Becker "C" vertical.
- 1—Becker No. 2H, vertical.
- 1—Newton No. 1 duplex.
- 1—Pratt & Whitney 6x80 thread.

GEAR CUTTERS

- 2—Barber-Colman No. 3.
- 4—Hercules 8".
- 2—Brown & Sharpe 3x26.
- 1—Brown & Sharpe No. 13.
- 1—Gould & Eberhardt 60", spur.
- 1—Fellows Nos. 61, 6 & 612.
- 1—Gleason 6", 11" & 18", bevel.

TURRET & SCREW MCHS.

- 1—Foster No. 1-B turret.
- 1—Warner & Swasey No. 3-A.
- 3—Foster No. 2-B turret.
- 1—Warner & Swasey No. 4, p. f.
- 1—Warner & Swasey No. 2, p. f.
- 3—W. & S. No. 2-A, bar fd. turret.
- 10—Warner & S. No. 1, wire fd. tur.
- 1—New Foster No. 10 turret.
- 4—Greenlee, 24x26" turret.
- 4—J. & L. 2x24.
- 1—J. & L. 2-spindle turret.
- 1—J. & L. 3x36", flat.
- 1—Acme 14" turret.
- 2—P. & W. 1x14 screw.

AUTOMATIC SCREW MCHS.

- 8—New Britain No. 24.
- 2—Cleveland 2 $\frac{1}{2}$ " Model A.
- 15—Cleveland 1" to 2" capacity.
- 1—Cleveland 1" to 2" capacity.
- 1—Cleveland 7 $\frac{1}{2}$ ".
- 7—Gridley 4-spindle, cap. 14".

PRESSES

- 2—Toledo No. 53, flywheel.
- 4—Toledo No. 55 & No. 55 $\frac{1}{2}$, grd.

MISCELLANEOUS

- 1—Acme bolt cutter, 3" cap., motor.
- 1—National bolt cutter, 2-spdl., 1".
- 1—Landis 14" bolt cutter, dbl. hd.
- 1—Landis 14 $\frac{1}{2}$ " sp. mtr. dr., bolt cut.
- 1—Erie 1100 lb. hammer.
- 1—Quickwork No. 4-B rot. shear.
- 1—New Quickwork No. 6 rot. shear.
- 1—Bliss No. 109 Slitter.

PARTIAL LIST—

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MOREY AND CO. INC. 408 Broome St.,
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Executives, Attention!

FORGING MACHINERY

BULLDOZERS:	Williams & White No. 2 & No. 4, belt drive.
HAMMERS:	Bradley Helve, 25, 60 and 80 lb. Bradley Upright Strap, 75 and 100 lb. Bement-Miles Single Frame Steam Forging, 800 and 2000 lbs. Bement-Miles Steam Drop, 1500 lb.
PUNCH & SHEAR:	King Bridge Co. 30" throat, 1" x 1". Long & Allstatter D. E. Nos. 6 & 7.
SHEARS:	Hilles & Jones No. 3 Guillotine, arranged for motor drive. Capacity 8" x 1 1/4" or 2 1/2" square. Pusey & Jones Guillotine, belt drive, capacity 3" square. Carlin Alligator, 1 1/4" Capacity.
UPSETTER:	Acme 3/4" Steel Bed.

It's the value you receive for your money that should interest you in these tools.

HEAVY MACHINE TOOLS

BORING MILLS:	Pond-Plainfield 84" Vertical, 2 swivel heads, table 72" x 6 1/2". Distance under rail 52". Belt drive. Niles Tool Works 90" Vertical, 2 swivel heads, table 72" x 6 1/4". Distance under rail 58". Belt drive. Niles 10" Vertical, 2 Swivel Heads, table 82" x 6". Distance under rail 80". Belt drive. Detrick & Harvey Horizontal Boring, Drilling and Milling Machine, bar 5" dia.
LATHES:	Johnson 50" x 49" 6" Triple Geared, belt drive, 40° between centers. 6" Raising Blocks, which increase the swing to 62". Weight about 56000 lb. Putnam 52" x 25" Triple geared, arranged for direct motor drive with 20 H. P. Variable Speed Motor, 375/1500 R. P. M., 230 Volts, D. C. Weight about 39000 lb.
TURRET LATHES:	Jones & Lamson 2 1/4" x 24" and 3" x 36" Flat Tur. Gisholt 24" x 6", with 6 1/4" hollow spindle.
PLANERS:	Pond 48" x 48" x 22", 2 rail and side heads. Table 36" wide, 7" thick. Weight about 43000 lb. Cincinnati 36" x 36" x 12", 1 rail and 1 side head.

RUSSELL MACHINE COMPANY
28th St. & A. V. R. R., PITTSBURGH, PA.

USED

BORING MILLS

24" Bullard vertical turret lathes,
New Era (3).
30" Bullard, 3-jaw chks., mtr. dr. (3).
34" Rogers, grd. feed, motor drive.
42" Baush, 2 swivel hds., pl.tbl., m.d.
42" Bullard rap. prod., 2 swiv. hds.
W. F. & J. Barnes horiz. drilling &
boring (2).

DRILLS

No. 3 Avey, power feed.
20" Prentice, lever feed.
20" W. F. & J. Barnes, wheel and
lever, power feed. (3).
21" Cincinnati, sliding head., b. g.,
p. f., tapping.
23" Rockford sliding hd., back grd.,
power feed. (3).
24" Kern, b. g., pwr. fd., tapping.
Colburn No. D-8 heavy duty.
Natco No. 14 Multi-Driller, bored
for 22, equip. with ten 14" spdls.

RADIAL DRILLS

2' American, pl., gr. box, swg. table.
2' Prentice plain, box table.

GANG DRILLS

4-spd. 20" Barnes, w. & l., pwr. fd.
Moline No. 6-D, 24" rl., 8 BV-14 hds.
Moline No. 7, 24" rail, 6 No. 28 hds.
Moline No. 11-D, 5' rl., 8 BV-14 hds.
Moline No. 16-D, 24" rl., 6 BV-20 hds.
Moline No. 17-D, 24" rl., 8 BV-14 hds.
Moline No. 7-D Cylinder Borer,
30" rail, 4 CWL heads.

GEAR CUTTERS

No. 12 Barber-Colman hobber.
No. 5 B. & S. spur gear cut., 36" cap.
50"x12" Gould & Eberhardt, spur,
with rack cutting attachment.
No. 6 Fellows gear shaper.

GRINDERS

No. 1 Cincinnati pl. cutter grinder.
No. 14 Cincinnati univ. cutter gdr.
10"x72" Norton plain., cylindrical.
12"x48" Cincinnati pl. cylindrical.
12"x48" Cincinnati univ. cylindrical.
16"x48" Cincinnati pl. cylindrical.
No. 6 Bryant internal.
No. 20 Heald rotary surface.
Pratt & Whitney vertical surface.

GRINDERS—Continued

No. 4 Gardner disc (3).
84"x24" Diamond face, motor drive.
Type A, Production polishers, (2).

LATHES

9"x18" Porter-Cable.
14"x 6' Rockford, c. r., quick chg.
16"x6" L. & S., 3-step, c. r., quick
change, practically new.
16"x8" Bradford, 5-step, c.r., taper.
16"x8" Von Wyck, 5-step, c. r.
18"x8" S. & B., 3-step, comp. rest.
18"x13" Lehmann, qk.ch., 3-step, c.r.
18"x14" Rockford, c. r., qk. chg.
20"x8" L. & S., 5-step, quick ch., c.r.
22"x8" Bradford, qck. chg., c. r.
24"x12" Reed, 4-step, compound rest.
28"x14" LeBlond, 3-step, comp. rest.

MILLING MACHINES

No. 1 Cincinnati plain, cone.
No. 14 Cincinnati plain, cone.
No. 2 Cincinnati plain, cone.
No. 24 Rockford universal, cone.
No. 3 Cincinnati plain, high power.
No. 3 H K. & T. vert., 42" table trav.
No. 4 Becker-Brainerd vertical.
No. 6 Becker-Brainerd vertical.
Putnam, Lincoln type (3).

PLANERS

24"x24"x 6' Cincinnati, 1 head.
24"x24"x 6' Whitcomb, 1 head.
66"x68"x17' Harrisburg, 2 heads.

SCREW MCHS. & TURRET LATHES

1" Smith screw machine, plain head.
14" Acme screw mcch., friction hd.
No. 1 Warner & S. hollow hexagon.
3"x36" J. & L. flat turret. grd. hd.
21"x10" Gisholt, 3-jaw chuck.
No. 53 National-Acme automatic.

SHAPERS

14" Barker crank.
20" Milwaukee crank.
21" American b. g. crank.
28" American b. g. crank.

SAWS

O. & C. cold saw.
Klemm metal band saw.
No. 5 Marvel hack saw.

MARSHALL & HUSCHART MACHINERY CO.

17 So. Jefferson St., Chicago, Ill.

Used Machinery Bargains

MILLING MACHINES.

No. 0 Rockford, power feed.
 No. 25 Becker, plain (3).
 No. 2-B Brown & Sharpe, plain.
 No. 2 B hvy. Brown & Sharpe, pl.
 No. 3 Cincinnati, plain (3).
 No. 3 Kempsmith, plain.

No. 3 H. Blond, plain, vert. att.
 No. 3 Cincinnati high power vert.
 No. 5 B Becker, vertical.
 No. 6 Becker vertical.
 Nos. 2 & 3 Pratt & W. die sinkers.
 No. 6 Whitney hand (3).

DRILLS.

No. 1½ Avey b. b., 1, 2, 4 spindle.
 28" Hamilton and Aurora drills.
 36" Aurora drills, (2).
 36" Cincinnati, tapping attach.

5' Reed-Prentice plain radial.
 36" American sensitive radial.
 No. 2 Foote-Burt 4-spindle gang.

LATHES.

14"x8' Fay & Scott, taper attach.
 16"x6' Reed-Prentice, agl. pul. dr.
 18"x7' Chard, d. b. g.
 18"x9' Bell, d. b. g.
 20"x8' Reed, with 220 v., d. c. mtr.
 20"x8' Hamilton, d. b. g.

20"x8' Lodge & Shipley, grd. hd., q. c.
 20"x10' American, geared head, q. c.
 22"x10' Davis, d. b. g., q. c.
 34"x10' Putnam, heavy type.
 38"x14' Fifield, heavy pattern.

SHAPERS AND PLANERS.

16" Stockbridge shaper.
 24" Kelly back geared shaper.
 26"x6' Pond planer.

30"x8' Ohio planer, heavy pattern.
 36"x36"x15' Betts planer, 2 hds.

GRINDERS.

6"x32" Norton grinder.
 14"x72" Norton grinder.
 16"x48" Landis crank pin, self contained.
 12"x32" Landis universal.

16"x96" Landis plain.
 No. 2 Oesterlein tool & cutter.
 No. 2 Woods tool & cutter.
 No. 1 Cincinnati tool grinders (3).
 P. & W. vertical surface.

SCREW MACHINES AND TURRET LATHES.

No. 00 B. & S. auto. screw machine,
 slotting attach., serial 6202.
 2 ½ Cleveland model A, ser. No. 27360.
 2" Cleveland model A, ser. No. 26302.
 1" Cleveland model A. (2).
 No. 1 Garvin hand screw machine.
 No. 3 Superior hand screw mch.
 No. 4 Milholland hand screw mch.

16" Dreses Fox lathe.
 18" Springfield and Am. Fox lathes.
 No. 3 Warner & Swasey Fox lathe.
 3x36 Jones & Lamson.
 21" Gisholt turret lathe.
 20x8 Fay & Scott univ. tur. lathe.
 No. 3 Pratt & Whitney turret lathe,
 3" hole in spindle.

PRESSES.

No. 75½ Bliss, tie rod frame, geared,
 6" stroke.
 No. 4 Walsh open back inclinable.
 No. 3 Stiles solid back.
 No. 95 Consolidated, solid back.

No. 24E Bliss double crank geared
 press, area bed 14"x72".
 No. 31 Toledo, solid back.
 No. 8½ Zeh & H. screw press, 75 ton,
 used 24 hours.

BORING MILLS.

20" Bullard, single turret head.
 36" Niles two heads.

42" Bullard, motor drive, 2 heads.
 24" Binsse horiz. boring machine.

TURRET LATHES.

24" and 36" Bullard vertical turret lathes, excellent condition.

-SPECIAL BARGAINS-

36"x18' Fifield Lathe and Taper.....	\$1000.
42"x36"x8' Cincinnati Planer, 1 head.....	800.
36"x30"x8' Cincinnati Planer, 2 heads, A. C. Motor....	800.
5' Bickford Full Universal Radial, A. C. Motor.....	800.

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Powell Co., Wm., Cincinnati

Arbors, Solid
Nicholson & Co., W. H., Wilkes-Barre, Pa.

Auto-Gages For Dies
Dally Machine Specialties, Inc., 4913 Lincoln Ave., Chicago

Automatics
New Britain Mfg. Co., New Britain, Conn.

Balancing Ways
Anderson Bros. Mfg. Co., Rockford, Ill.
Bowsler Co., N. P., South Bend, Ind.

Balls, Bearing and Burnishing
Abbott Ball Co., Hartford, Conn.

Band Saw Machines, for Metal
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Porter-Cable Machine Co., Syracuse, N. Y.

Barrels, Tumbling
Abbott Ball Co., Hartford, Conn.
Seely-Jones & Co., 2012 W. 18th, Chicago

Belt Shifters
Artisan Manufacturing Co., Cincinnati, O.

Bench Legs, Steel
Angle Steel Stool Co., Plainwell, Mich.
New Britain Mfg. Co., New Britain, Conn.

Bending Machines, Hand and Power
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Handley & Whittemore Co., Beloit, Wis.
Lewthwaite Mfg. Co., T. H. 417E, 31st, N.Y.
Louie Mfg. Co., Springfield, Ill.
Pedrick Tool & Machine Co., Philadelphia

Boring Bars
Pedrick Tool & Machine Co., Philadelphia

Boring Bars, Cylinder
Pedrick Tool & Machine Co., Philadelphia

Boring Machines, Horizontal
Avey Drilling Machine Co., Cincinnati
Morris Machine Tool Co., Cincinnati, O.
Pedrick Tool & Machine Co., Philadelphia
Rockford Drilling Machine Co., Rockford, Ill.

Burnishing Equipment, Ball
Abbott Ball Co., Elmwood, Conn.

Bushings, Drill Jig
Ex-Cell-O Tool & Mfg. Co., Detroit, Mich.

Cabinets, Tool
Angle Steel Stool Co., Plainwell, Mich.

Casters for Trucks
Hamilton Caster & Mfg. Co., Hamilton, Ohio

Chains, Power Transmission
Whitney Mfg. Co., Hartford, Conn.

Chuck Machines
New Britain Mfg. Co., New Britain, Conn.

Chucks, Collet
Hardinge Brothers, Inc., 1770 Bertean Ave., Chicago

Chucks, Drill
Eastern Tube & Tool Co., Inc., 580 Johnson Ave., Brooklyn, N. Y.
Jacobs Mfg. Co., Hartford, Conn.

Chucks, Drill and Tap
Peter Bros. Mfg. Co., Algonquin, Ill.
Seely-Jones & Co., 2012 W. 18th, Chicago

Chucks, Keyway Cutting
Seely-Jones & Co., Ry. Exch. Bldg., Chicago

Chucks, Lathe
Westcott Chuck Co., Oneida, N. Y.

Chucks, Wrenchless
Thomas Elevator Co., 31 S. Payne Ave., Chicago

Clamps, Die
Dally Machine Specialties, Inc., 4913 Lincoln Ave., Chicago

Clutches, Friction
Edgemont Machine Co., Dayton, O.

Cold Saws
Burke Machine Tool Co., Cooncannon, Ohio
Peter Bros. Mfg. Co., Algonquin, Ill.

Collets
Hardinge Brothers, Inc., 1770 Bertean Ave., Chicago

Contract Work Wanted
Burke Machine Tool Co., Cooncannon, O.

Counterbores and Spot Racers
Glenzer Co., J. C., Detroit, Mich.

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Canton Foundry & Mfg. Co., Canton, Ohio

Crank Pin Turning Machine
Pedrick Tool & Machine Co., Philadelphia

Crankshafts
Leard Co., Wm., New Brighton, Pa.

Cutters, Keyseating
Davis Keyseater Co., Rochester, N. Y.
Seely-Jones & Co., 2012 W. 18th, Chicago
Whitney Mfg. Co., Hartford, Conn.

Cutters, Milling
Genesee Mfg. Co., Rochester, N. Y.
Whitney Mfg. Co., Hartford, Conn.

Cutting-Off Machines
Peter Bros. Mfg. Co., Algonquin, Ill.

Cylinder Boring Machines, Portable
Pedrick Tool & Machine Co., Philadelphia

Dial Indicators
Federal Products Corp'n, Providence, R. I.
Wallace Brothers, 160 N. Wells St., Chicago

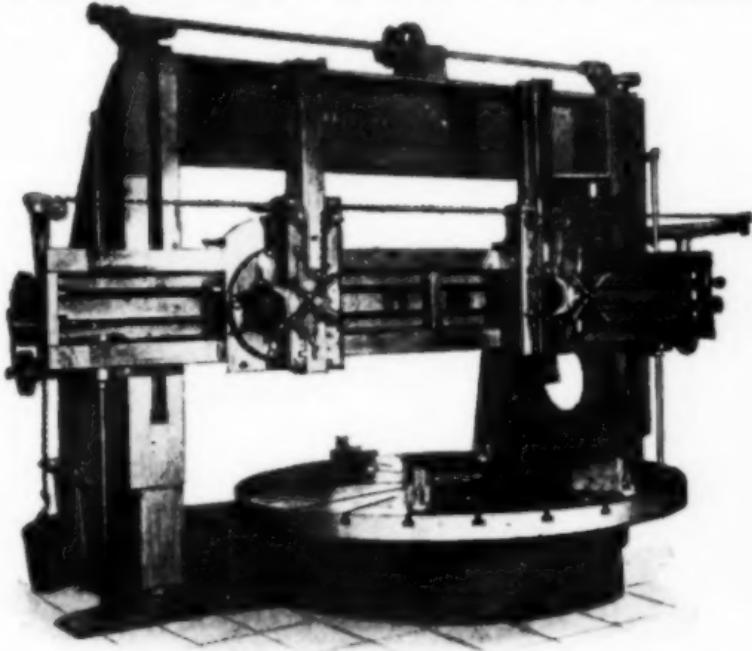
Die Sets
Dally Machine Specialties, Inc., 4913 Lincoln Ave., Chicago

Dies, Pipe Threading
Bignalid-Koeler Mfg. Co., Edwardsville, Ill.

Dies, Self-Opening Adjustable
Rickett-Shafer Co., Erie, Pa.

12 foot BETTS BORING MILL

92% NEW AT 40% OF NEW PRICE



Cone Drive, 10¹ Diam. Table, Geared Feeds, 84¹ Under Rail;
4-18¹ Face Plate Jaws

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Drill Racks

Pearless Machine Co., Racine, Wis.

Drilling Machine Heads, Multiple

National Automatic Tool Co., Richmond, Ind.
United States Drill Head Co., Cincinnati

Drilling Machines, Automatic Sensitive

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Drilling Machines, Bench

Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Conneaut, Ohio
Kingsbury Mfg. Co., Keene, N. H.
Rockford Drilling Machine Co., Rockford, Ill.
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Horizontal

Kingsbury Mfg. Co., Keene, N. H.
Morris Machine Tool Co., Cincinnati, O.
Rockford Drilling Machine Co., Rockford, Ill.

Drilling Machines, Multiple Spindle

Avey Drilling Machine Co., Cincinnati
Kingsbury Mfg. Co., Keene, N. H.
National Automatic Tool Co., Richmond, Ind.
Rockford Drilling Machine Co., Rockford, Ill.
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Portable Electric

Independent Pneumatic Tool Co., 601 W.
Jackson Blvd., Chicago
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N. A., 5001 N. Lincoln St., Chicago
Wisconsin Electric Co., Racine, Wis.

Drilling Machines, Post

Mueller Machine Tool Co., Cincinnati

Drilling Machines, Radial

Morris Machine Tool Co., Cincinnati, O.
Mueller Machine Tool Co., Cincinnati
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Sensitive

Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Conneaut, Ohio
Kingsbury Mfg. Co., Keene, N. H.
Leland-Gifford Co., Worcester, Mass.
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.
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Rockford Drilling Machine Co., Rockford, Ill.
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.

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Cleveland Twist Drill Co., Cleveland, O.

Dust Handling Equipment

Knickerbocker Co., Jackson, Mich.

Emery Wheel Dressers and Cutters

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Precision Truing Machine & Tool Co., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.
Western Tool & Mfg. Co., Springfield, O.

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Filing Room Equipment

Wardwell Mfg. Co., Cleveland, O.

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Strand Co., N. A., 5001 N. Lincoln St., Chicago

Forgings, Hollow Bored

American Hollow Boring Co., Erie, Pa.

Forgings, Upset

American Forge Co., 2631 S. Hoyne Avenue,
Chicago

Furniture, Machine Shop

New Britain Machine Co., New Britain, Conn.
Western Tool & Mfg. Co., Springfield, O.

Gauges, Piston and Piston Ring

Federal Products Corp'n, Providence, R. I.

Gauges, Thread

Federal Products Corp'n, Providence, R. I.

Gears

Boston Gear Works Sales Company, Norfolk
Downs, Mass.

Grinding Machines, Belt

Gallmeyer & Livingston Co., Grand Rapids,
Mich.

Pearless Surfacing Machine Co., Troy, N. Y.

Grinding Machines, Bench

Bodine Electric Co., 2256 W. Ohio St., Chicago
Gallmeyer & Livingston Co., Grand Rapids,
Mich.

Jarecki McHe, & T. Co., Grand Rapids, Mich.

LeBlond Mch. Tool Co., R. K., Cincinnati, O.

Thompson Grinder Co., Springfield, Ohio

Wilmart & Norman Co., Grand Rapids, Mich.

Grinding Machines, Cutter, Reamer and Tool

Gallmeyer & Livingston Co., Grand Rapids,
Mich.

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Thompson Grinder Co., Springfield, Ohio

Wilmart & Norman Co., Grand Rapids, Mich.

Grinding Machines, Cylinder

Whitney & Son, Baxter D., Winchendon, Mass.

Grinding Machines, Cylindrical

Jarecki McHe, & T. Co., Grand Rapids, Mich.

Thompson Grinder Co., Springfield, Ohio

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Mich.

Jarecki McHe, & T. Co., Grand Rapids, Mich.

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Mich.

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Grinding Machines, Drill

Gallmeyer & Livingston Co., Grand Rapids,
Mich.

La Salle Tool Co., La Salle, Ill.

Wilmart & Norman Co., Grand Rapids, Mich.

Grinding Machines, Face

Taylor & Fenn Co., Hartford, Conn.

Grinding Machines, Internal

Taylor & Fenn Co., Hartford, Conn.

Thompson Grinder Co., Springfield, Ohio

Whitney & Son, Baxter D., Winchendon, Mass.

Wilmart & Norman Co., Grand Rapids, Mich.



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Whitney & Son, Baxter D., Winchendon, Mass.



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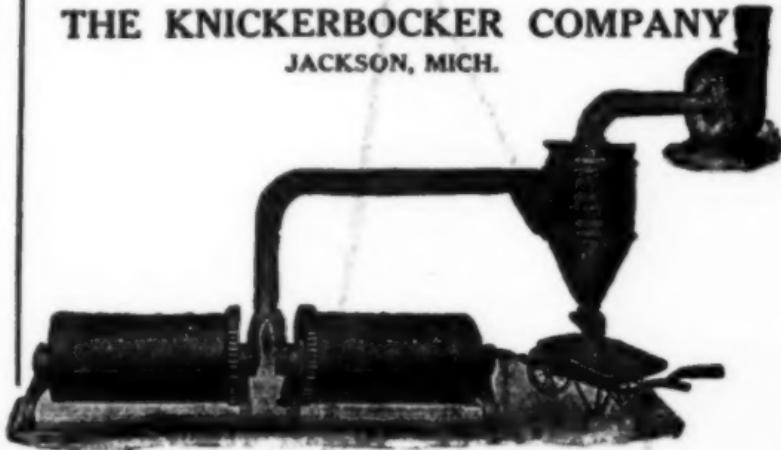
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Our Booklet tells about this superior Collector in an interesting way. Let us mail you a copy.

THE KNICKERBOCKER COMPANY
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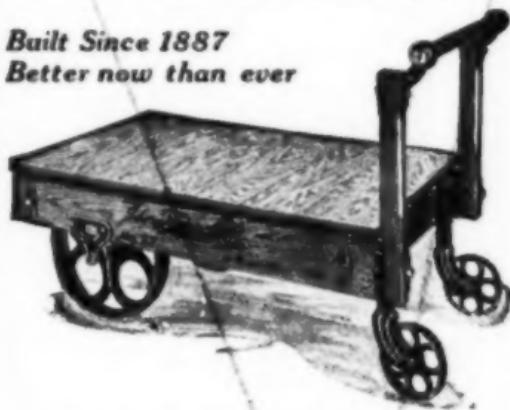
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Let them help you make money. They are the—*

John T. Towsley Mfg. Co.
1036 Woodrow St., Cincinnati, Ohio

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Lucas & Son, J. L., Inc.	80	Rickert-Shafer Co.	71
M			
McCabe Lathe & Machinery Corporation, J. J.	111	Rockford Drilling Machine Co.	61
McCoy-Brandt Machinery Co.	77	Rockford Iron Works	52
McDonald Machinery Company	85	Rowlington, D. E.	86
McMullen Machinery Co.	90	Russell Machine Co.	120
Machine Tools Sales Company	91	Ryerson & Son, Jos. T., Inc.	72
Marr-Galbreath Machinery Co.	81	S	
Marshall & Huschart Mchly. Co.	121	Scully-Jones & Co.	30
Mid-West Machine Tool & Supply Co.	106	Sebastian Lathe Co.	22
Molitor Machinery Co., Chas.	83	Second-Hand Machinery	73 to 125
Monarch Machine Tool Co.	22	Service Tool, Die & Mfg. Co.	
Monarch Machinery Co.	96	Sheldon Machine Co.	
Morey and Co. Inc.	119	Sigourney Tool Co.	58
Morris Machine Tool Co.	116	Simmons Machine Tool Corp.	113
Moyer, J. N.	108	Smith Machinery Co., H. A.	89
Mueller Machine Tool Co.	112	Smith & Mills Co.	6
N		Steptoe Co., John	7
National Automatic Tool Co.	35	Stocker-Rumely-Wachs Co.	116
National Mche. Tool Bldrs. Ass'n		Stoehr Machinery Co., A. M.	86
National Machinery Mfg. Co.	112	Stow Flexible Shaft Co.	14
National Machine Tool Co.	40	Strafer, A. F.	78-79
New Britain Machine Co.	136	Strand & Co., N. A.	18
Nicholson & Co., W. H.	23-51	Strong, Carlisle & Hammond Co.	79
Niles-Bement-Pond Co.	76-77	Syracuse Supply Company	82
Norton-Broadway Mchly. Co.	109	T	
O		Taylor & Fenn Co.	63
O'Brien Machinery Co.	75	Thomas Elevator Co.	34
Osborne Machinery Co., D. M.	80-117	Thompson Grinder Co.	14
Osborne & Sexton Mchly. Co.	101	Titan Tool Co.	58
Oviatt & Co., D. C.	115	Tolhurst Machine Works	28
P		Towsley Mfg. Co., John T.	133
Patterson Tool & Supply Co.	92	Tubor, Velick & Co., Inc.	84
Pedrick Tool & Machine Co.	21	Tucker, W. C. & F. C.	50
Peerless Machine Co.	54	U	
Peerless Surfacing Mche. Co., Inc.	13	United States Drill Head Co.	60
Peninsular Machinery Co.	88	W	
Peter Bros. Mfg. Co.	56-64	Wallace Brothers	38
Porter-Cable Machine Co.	16	Walton Co.	62
Powell Co., The Wm.	32	Wardwell Manufacturing Co.	48
Precision Truing Machine & Tool Company	15	Warner & Swasey Co.	104
R		Washburn Company, The.	87
Racine Tool & Machine Co.	56	Westcott Chuck Co.	24
Randle Machinery Co.	92	Western Tool & Mfg. Co.	27
Reeve-Fritts Company	73	White Machinery Co., A. D.	122
Reliance Elect. & Engineering Co.	2	Whitney Mfg. Co.	37
Reliance Machinery Sales Co.	90	Whitney Metal Tool Co.	54
		Whitney & Son, Baxter D.	12
		Wilmarth & Norman Co.	135
		Wilson-Maeulen Co.	39
		Winterer, Herman L.	94
		Wisconsin Electric Co.	3

Our Silver Anniversary

On May 17th, 1925, we celebrate our twenty-fifth birthday, and begin our second quarter of a century.

We thank our many, many friends for their patronage, and assure them that we shall continue our policy of building only the best tools that can be produced by a thorough organization and the skill that comes only from long experience.

In the Improved New Yankee Drill Grinders, the W. & M. Universal Grinders and the W. & M. Surface Grinders we have a line of machines of which we are justly proud. Each of them is a leader, because it deserves to be.

During the next quarter century we expect to increase by many fold the number of our friends and patrons; and when our Golden Anniversary rolls around 25 years from now, we hope that your name will long have been among those who will wish us well because we shall have served you well.

Our latch-string is always out to those who want to improve their grinding methods.

Wilmarth & Morman Co.

Manufacturers of Precision Grinding Machines since 1900

1185 Monroe Ave., N. W., Grand Rapids, Mich.

They Nest—



New Britain Tote Boxes

Stiffness—Lightness—Durability and close nesting are features of superiority. One piece construction except handle. Their design positively prevents sticking when nested empty. Corners where strain is the greatest are of quadruple thickness.

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"Shop Furniture
Originators"



New Britain,
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